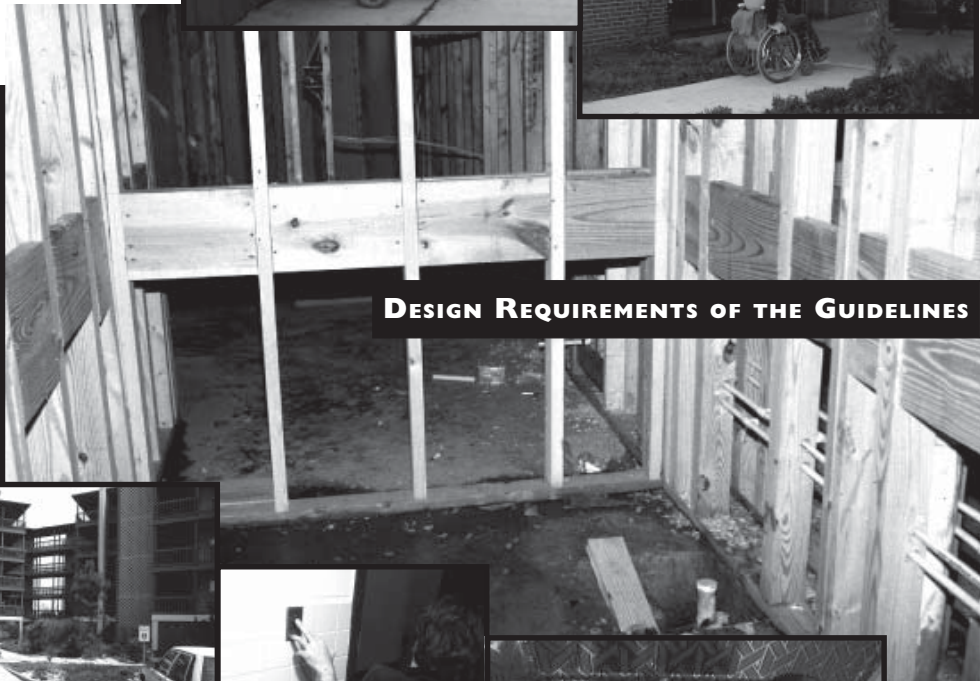


## Part Two



## DESIGN REQUIREMENTS OF THE GUIDELINES



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## Chapter One:

### REQUIREMENT I

#### Accessible Building Entrance on an Accessible Route



*...covered multifamily dwellings shall be designed and constructed to have at least one building entrance on an accessible route unless it is impractical to do so because of terrain or unusual characteristics of the site.*

**Fair Housing Act Regulations, 24 CFR 100.205**

## Definitions from the Guidelines

**Accessible route.** A continuous unobstructed path connecting accessible elements and spaces in a building or within a site that can be negotiated by a person with a severe disability using a wheelchair, and that is also safe for and usable by people with other disabilities. Interior accessible routes may include corridors, floors, ramps, elevators and lifts. Exterior accessible routes may include parking access aisles, curb ramps, walks, ramps, and lifts. A route that complies with the appropriate requirements of ANSI A117.1 – 1986, a comparable standard, or Section 5, Requirement 1 of these guidelines is an “accessible route.” In the circumstances described in Section, 5, Requirements 1 and 2, “accessible route” may include access via a vehicular route.

**Building.** A structure, facility or portion thereof that contains or serves one or more dwelling units.

**Building entrance on an accessible route.** An accessible entrance to a building that is connected by an accessible route to public transportation stops, to parking or passenger loading zones, or to public streets or sidewalks, if available. A building entrance that complies with ANSI A117.1 – 1986 or a comparable standard complies with the requirements of this paragraph.

**Entrance.** Any exterior access point to a building or portion of a building used by residents for the purpose of entering. For purposes of these guidelines, an “entrance” does not include a door to a loading dock

or a door used primarily as a service entrance, even if nonhandicapped residents occasionally use that door to enter.

**Finished grade.** The ground surface of the site after all construction, levelling, grading, and development has been completed.

**Site.** A parcel of land bounded by a property line or a designated portion of a public right of way.

**Slope.** The relative steepness of the land between two points and calculated as follows: The distance and elevation between the two points (e.g., an entrance and a passenger loading zone) are determined from a topographical map. The difference in elevation is divided by the distance and that fraction is multiplied by 100 to obtain a percentage slope figure. For example, if a principal entrance is ten feet from a passenger zone, and the principal entrance is raised one foot higher than the passenger loading zone, then the slope is  $1/10 \times 100 = 10\%$ .

**Undisturbed site.** The site before any construction, levelling, grading, or development associated with the current project.

**Vehicular or pedestrian arrival points.** Public or resident parking areas, public transportation stops, passenger loading zones, and public streets or sidewalks.

**Vehicular route.** A route intended for vehicular traffic, such as a street, driveway, or parking lot.

## INTRODUCTION

The Fair Housing Accessibility Guidelines (the Guidelines) define covered multifamily dwellings as

1. those buildings consisting of four or more units if such buildings have one or more elevators and
2. ground floor units in other buildings having four or more units.

The Guidelines do not specify the total number of entrances a building must have nor where they must be positioned. However, the Guidelines do stipulate that each covered building on a site must have at least one accessible entrance on an accessible route. It is expected that most sites can and should be made accessible, i.e., an accessible route can be provided to entrances of covered dwellings; therefore, it is also expected that covered dwelling units will be provided on all building sites, including those where steep slopes, rock outcroppings, marshy areas, and similar conditions exist.

The requirements of the Fair Housing Act are outlined in the Act itself and in the implementing regulations issued by the U.S. Department of Housing and Urban Development (HUD). Section 100.205 (a) of these regulations states: “Covered multifamily dwellings for first occupancy after March 13, 1991, shall be designed and constructed to have at least one building entrance on an accessible route unless it is impractical to do so because of the terrain or unusual characteristics of the site.”

Requirement 1 of the Guidelines presents guidance on designing an accessible building entrance on an accessible route. Requirement 1 also provides tests to assist a developer of buildings that do not have one or more elevators to determine when an accessible entrance is impractical because

of extreme terrain or unusual characteristics of the site. See impracticality tests pages 1.40 through 1.55. Units where entrances are impractical do not have to meet the other design requirements; the tests, therefore, can alter the number of units on a site that must comply.

The language of the Fair Housing Act itself does not provide an exception for site impracticality; however, as HUD notes in the preamble to its regulations, “the legislative history makes it clear that Congress was ‘sensitive to the possibility that certain natural terrain may pose unique building problems.’”<sup>6</sup> In applying the site impracticality tests, architects and builders should keep in mind that in enforcement proceedings under the Fair Housing Act, it is the person(s) who designed and constructed the building(s) who has the burden of establishing that site impracticality existed.

Accessible routes and accessible entrances may occur in the course of any design project. They also may not occur and be expensive to include later if a careful approach to site design is not conducted. Deliberate manipulation of the grade to avoid the requirements of the Fair Housing Act is regarded as a discriminatory housing practice and must be avoided. This chapter offers methods and strategies to assist designers and builders to more efficiently provide accessible entrances and routes for all sites.

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<sup>6</sup>House Report No. 100-711, page 27

## EARLY PLANNING FOR ACCESSIBLE ROUTES AT ENTRANCES

The language of the Fair Housing Act requires covered multifamily dwellings to be **designed** and constructed in a manner that incorporates certain features of accessible and adaptable design. The Act specifically includes the design process, thereby recognizing that changes will need to be made in the way buildings are designed in order to assure accessibility.

Planning for accessibility should be an integral part of the design process in multifamily housing developments. This is particularly crucial in the early stages of planning when major decisions are being made about the overall design of the site. The location and orientation of buildings, parking areas, loading zones, and other elements have a major impact on the ease with which accessibility can be achieved in a finished development. This is especially important on sloping sites where careful initial planning can eliminate the need for major earthwork and the construction of elaborate ramps, bridges, lifts, or elevators to provide accessibility.

Attempts should be made to set the entrance floor levels of buildings at or close to ground levels to eliminate or minimize changes in level that may require steps or ramps. Often this may be accomplished by making use of fill dirt which has been excavated from other parts of the building site to alter the ground levels at appropriate places.

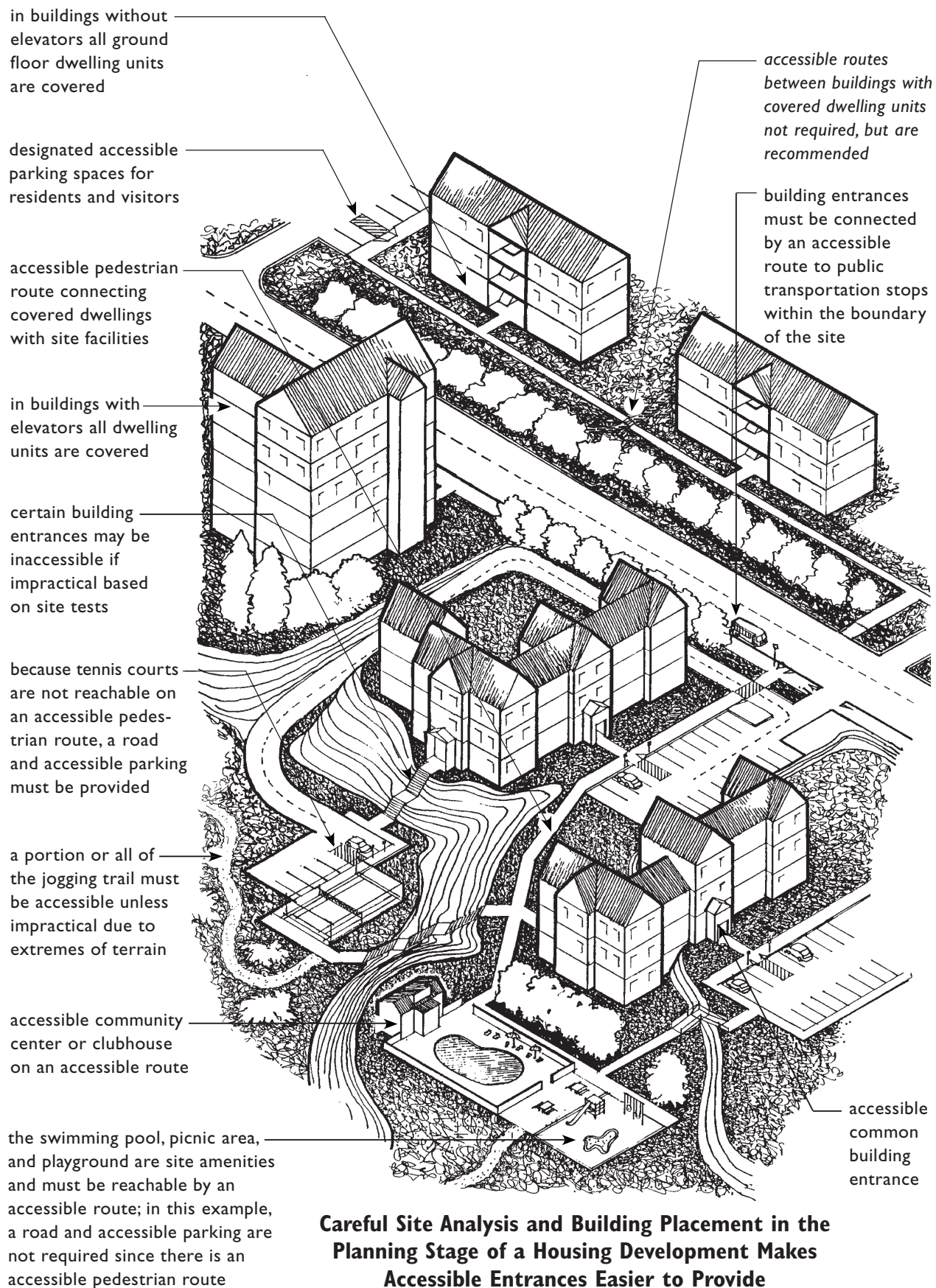
Since people generally arrive at buildings by a private car, bus, or taxi, the location of vehicle arrival points is critical. Passenger drop-off points and parking areas for people with disabilities

should be located close to building entrances and at levels which do not necessitate climbing steep slopes to reach the entrance floor level.

The path of travel to and placement of site amenities, such as outside mailboxes, refuse disposal areas, swimming pools, clubhouses, and sports facilities should be given careful consideration early in the planning process. The intent of the Fair Housing Act is that people with disabilities be able to reach and use such amenities.

In this manual, the ANSI Standard A117.1 - 1986 is referenced as the accessibility standard for compliance in much of public and common use space of multifamily housing developments. The Guidelines themselves cite the ANSI A117.1 - 1986 Standard (*the American National Standard for Buildings and Facilities – Providing Accessibility and Usability for Physically Handicapped People*).

Although referenced, the ANSI specifications are not mandated. Any ANSI citation in this manual refers to the 1986 ANSI A117.1 Standard and should be understood to mean that compliance with ANSI or any other similar accessibility standard that is equal to or more stringent than the ANSI A117.1 (1986) Standard would fulfill the requirements of the accessibility provisions of the Fair Housing Act.



## WHAT IS AN ACCESSIBLE ROUTE ?

An accessible route is a continuous, unobstructed path through sites and buildings that connects all accessible features, elements, and spaces. It is the critical element that allows the successful use of any site or building by a person with a disability. Such a route is safe for someone using a wheelchair or scooter and also is usable by others.

Accessible routes on a site may include parking spaces, parking access aisles, curb ramps, walks, ramps, and lifts. Accessible routes within buildings may include corridors, doorways, floors, ramps, elevators, and lifts. Specifications for accessible routes are found in ANSI 4.3. Certain elements of accessible routes which must be given careful attention are:

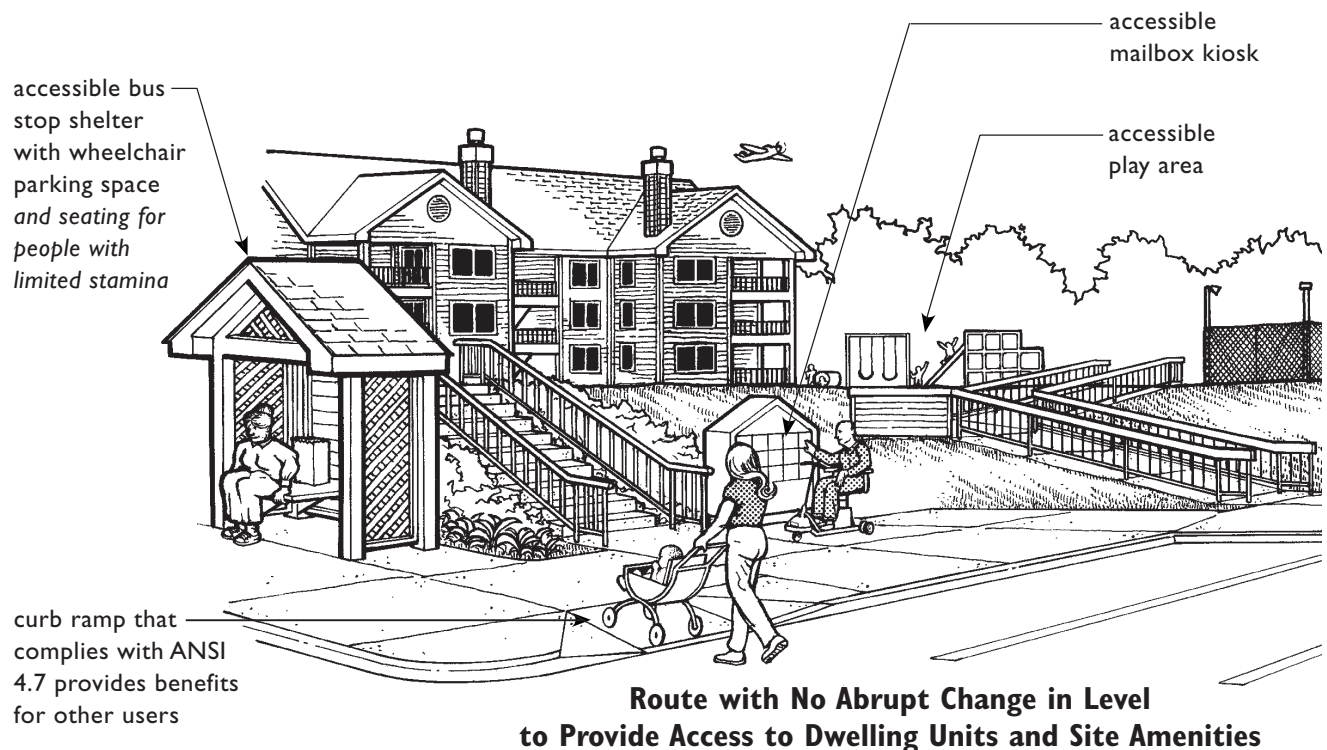
- width of route
- slope of route
- ground and floor surfaces
- cross slope
- headroom
- curb ramps
- protruding objects
- lift/elevator design

These elements are discussed in detail in Part Two, Chapter 2.

## Stairs and Accessible Routes

Stairs are not an acceptable component of an accessible route because they prevent use by people using wheelchairs and others who cannot climb steps. ANSI specifications for accessible stairs (4.9) make stairs safer and more usable by mobility impaired people who can climb stairs.

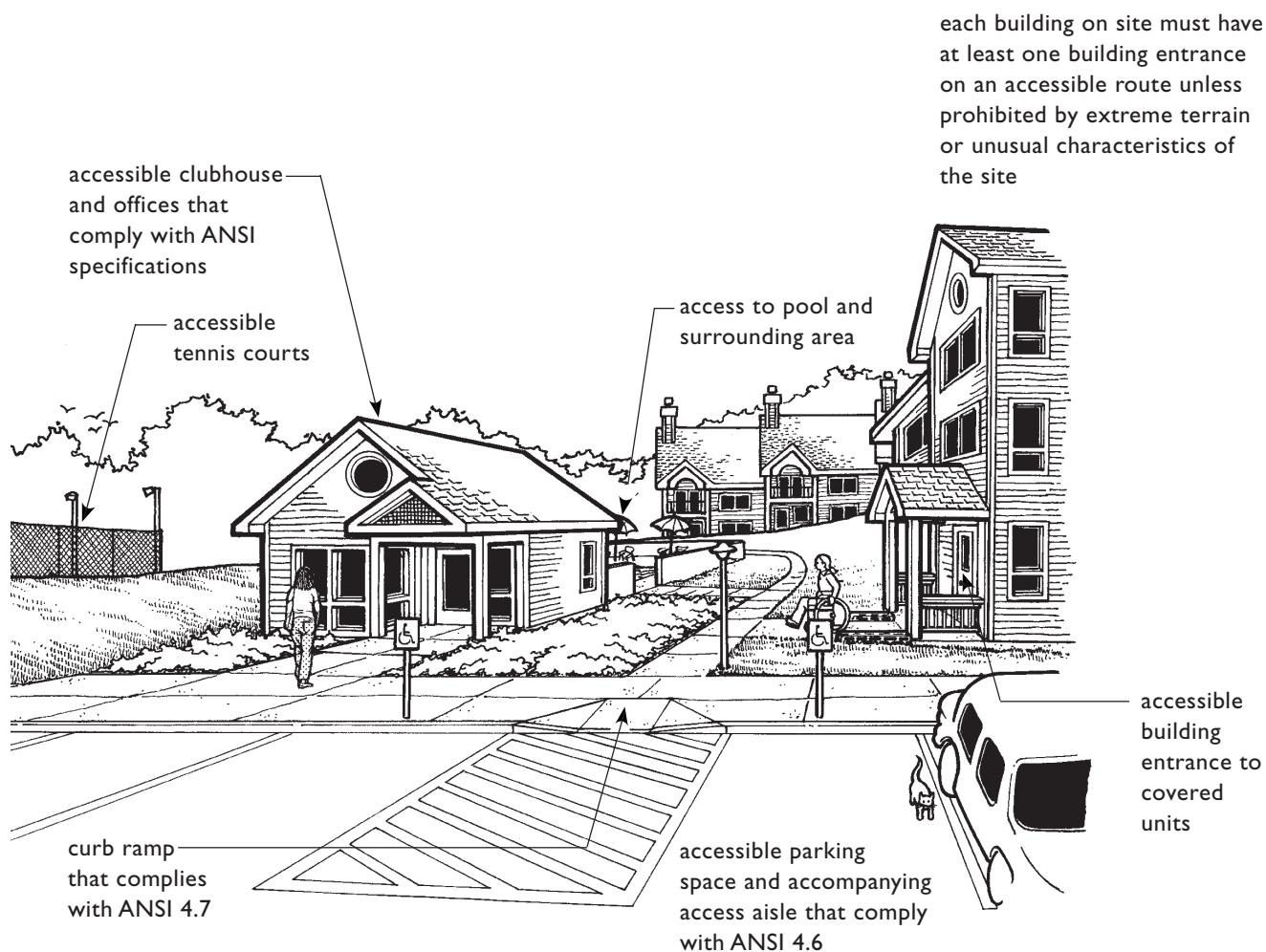
accessible routes must connect covered dwelling units with accessible site facilities (and at least one of each type of recreational facility when more than one of each is provided at any location)



When stairs are installed along routes that are required to be accessible, there must be an alternative way to get between levels. If the alternative way is an elevator or lift, the stairs do not need to comply with ANSI 4.9. If the alternative way is a ramp, the stairs must comply with ANSI 4.9. When an accessible route consists of both a ramp and stairs, it is best if they are located in close proximity so people who can use only one of the two (such as the ramp), need not travel an unreasonable additional distance.

### Walks on Accessible Routes

Walks that are part of accessible routes become ramps when their slope exceeds 5% (1 in 20). Handrails are not required on walks with slopes between 0% and 5%, but they are required on those steeper than 5% and up to 8.33% (1 in 12). Slopes steeper than 8.33% are not usable by most people with disabilities and cannot be considered part of an accessible route. Handrail requirements for walks differ, depending upon which buildings the walks connect. This is addressed in the following sections.



## **WHERE ARE ACCESSIBLE ROUTES REQUIRED ON SITES?**

### **Accessible Route from Site Arrival Points to Accessible Building Entrances**

The Guidelines require that an accessible route be provided from public transportation stops, accessible parking spaces, accessible passenger loading zones, and public streets or sidewalks to accessible building entrances unless it is impractical to do so as determined by application of the site tests specified in Requirement 1 (site impracticality due to terrain or unusual site characteristics, see page 1.38). Because these walkways are required to be accessible, handrails, as per ANSI, must be provided when the slope of the walk is between 5% (1 in 20) and 8.33% (1 in 12).

### **Accessible Routes and Walks Between Accessible Buildings and Site Facilities**

The Guidelines require accessible routes to connect buildings containing covered dwelling units (those with one or more elevators and ground floors of other buildings, except two-story townhouses) and accessible facilities, elements, and spaces on the same site. The Guidelines do not require accessible routes, walks, or paths between buildings containing only covered dwelling units unless the route is also part of a required accessible route. For example, if a building also contains a facility such as a laundry that is shared by two buildings, then an accessible route must be provided between the two buildings.

If no portion of the finished grade of a route between two buildings that contain only dwelling units exceeds 8.33% (1 in 12), it is

recommended that the route be made accessible. Such voluntary accessible walks must meet the same specifications as an accessible route except that handrails, commonly required on accessible routes when their slope exceeds 5% (1 in 20), are not required.

### **Accessible Site Facilities on Accessible Routes**

The Guidelines require accessible and usable public and common use areas. All facilities, elements, and spaces that are part of public and common use areas must meet ANSI 4.1 through 4.30 and must be on an accessible route from covered dwelling units. Such facilities might include outside mailboxes, site furnishings, outside storage areas, refuse disposal areas, playing fields, amphitheaters, picnic sites, swimming pools and sun decks, tennis courts, clubhouses, playgrounds, gazebos, parking areas, sidewalks, and all or part of nature trails and jogging paths.

Where multiple recreational facilities of the same type are provided at the same location on the site (e.g., tennis courts), not all but a “sufficient” number of the facilities must be accessible to ensure an equitable opportunity for use by people with disabilities. Whenever only one of a type of recreational facility is provided at a particular location on the site, it must be accessible and connected by an accessible route to the covered dwelling units. (See Chapter 2: “Accessible Public and Common Use Spaces.”)

### Use of Vehicles for Access to Site Facilities

When the finished grade exceeds 1 in 12 or other physical barriers (natural or man made) or legal restrictions, all of which are outside the control of the owner, prevent the installation of an accessible pedestrian route between covered dwellings and some public or common use site facilities; the Guidelines allow for automobiles to be used for access if certain conditions are met. When such a vehicular route is used as an alternative method to achieve accessibility:

1. the required parking at covered dwelling units must be provided, and
2. an appropriate number of additional accessible parking spaces on an accessible route must be

provided at each facility that is otherwise unreachable by means of an accessible pedestrian route.

For a complete discussion of parking requirements, see Chapter 2: “Accessible and Usable Public and Common Use Areas.”

Careful planning and strategic location of accessible parking spaces and curb ramps around dwelling units and amenities will help give continuity between vehicular and pedestrian accessible routes. Accessible parking spaces and curb ramps are recommended at all on-site amenities to give residents choices in how to reach them, even those served by accessible pedestrian routes. This is especially important where accessible routes are very long and where parts or all of the route have maximum allowable slopes of 1 in 12 (1:12), which are difficult or impossible for many people to use.



**In Some Circumstances,  
Site Access by Vehicle May Be Acceptable**

## ACCESSIBLE ENTRANCES

All buildings containing covered dwelling units and separate buildings containing public and common use spaces, such as clubhouses, must have at least one accessible building entrance on an accessible route, unless it is impractical to do so as determined by applying the site impracticality tests provided in the Guidelines; see pages 1.38 through 1.58. Entrances into individual dwellings on an interior accessible route are referred to in the Guidelines as “entries.” These entries and the entries to dwelling units having separate exterior ground floor entrances will be discussed in Chapter 3: “Usable Doors.” The Guidelines establish three requirements for an accessible building entrance.

### Accessible Building Entrance on an Accessible Route

The building entrance must be connected by an accessible route to public transportation stops, to accessible parking and passenger loading zones, and to public streets or sidewalks.

## Primary Use

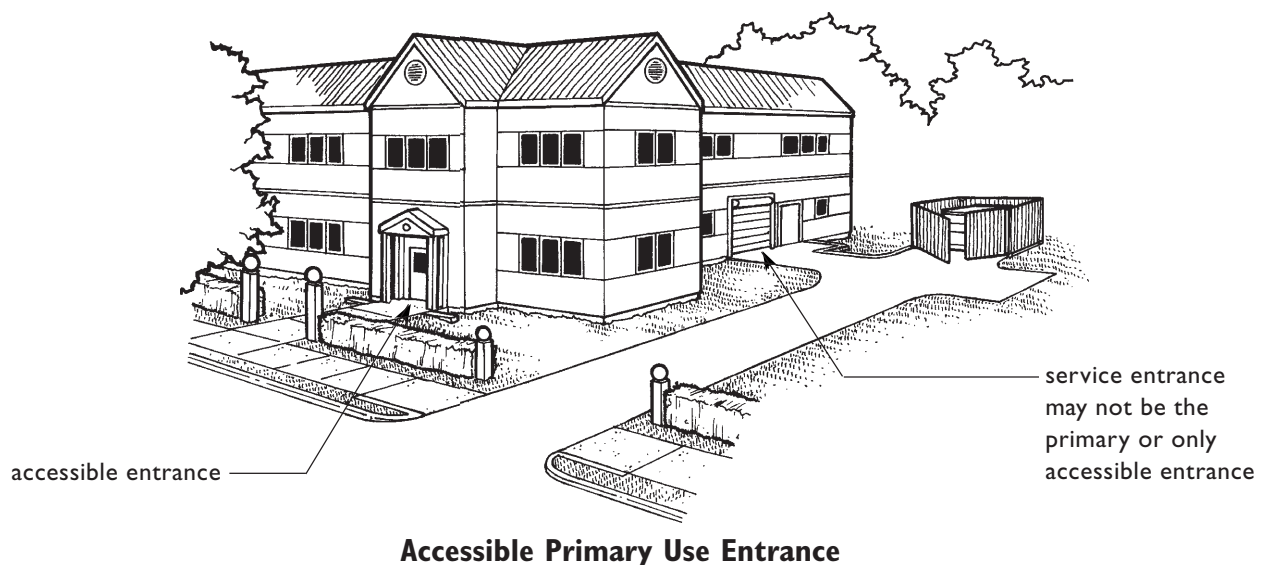
The accessible (common use) entrance must be one which is typically used by residents and/or guests for the purpose of entering the building. Service doors or loading docks cannot serve as the only accessible entrance to buildings, even if residents occasionally use such a door for entering the building.

## Building Entrance Design Features

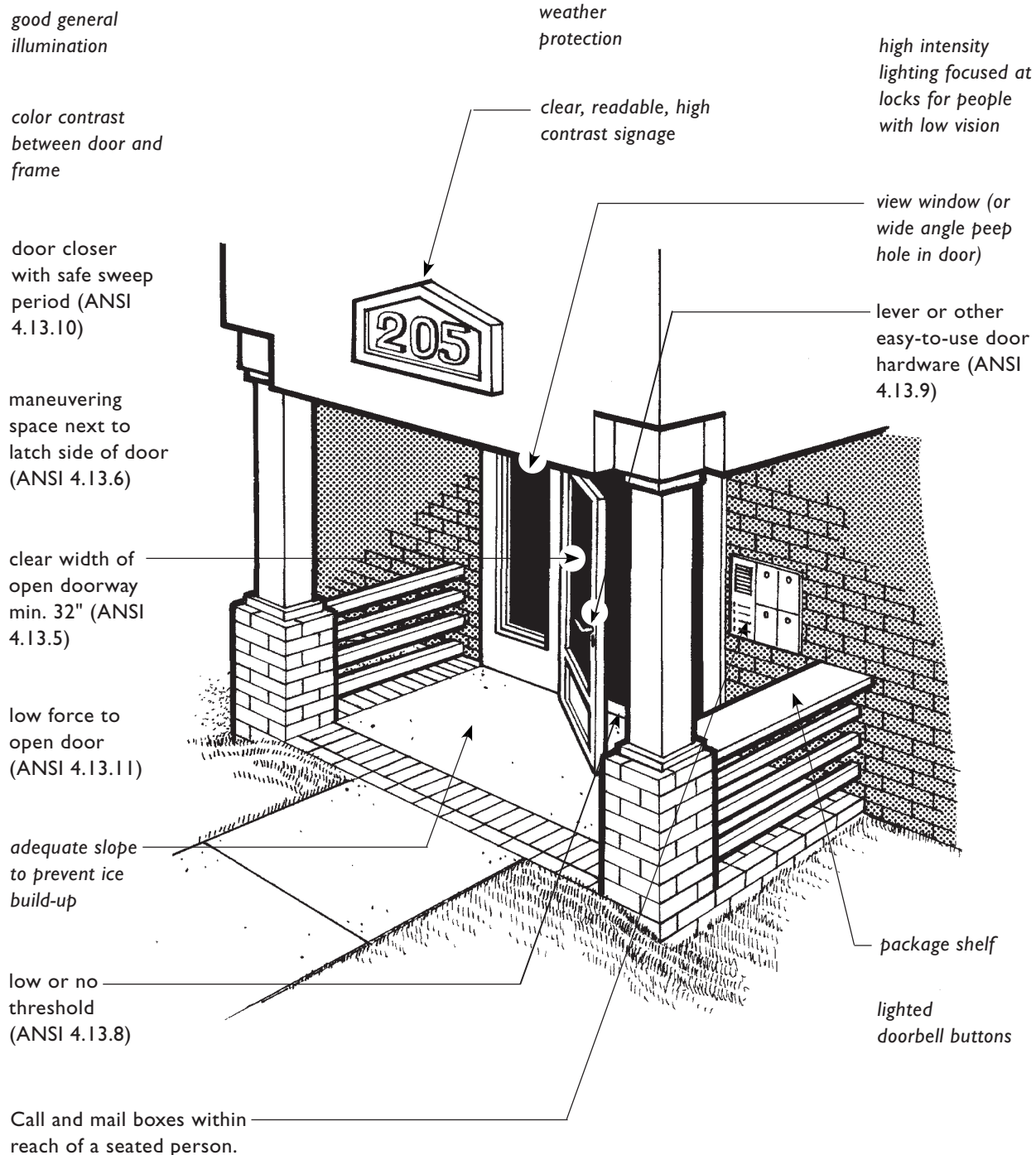
The entrance door itself must be usable by people with disabilities. Detailed specifications to achieve this are given in ANSI 4.13. Accessible building entrances are considered public and common use spaces and, unlike unit entrances, must meet the ANSI requirements on both sides of the door; see the next page.

Main factors which must be addressed are:

- minimum clear width of open doorway 32 inches,
- low or no threshold,
- clear maneuvering space inside and outside the door,
- force needed to open the door,
- accessible door hardware, and
- safe door closing speed.



Accessible Primary Use Entrance



*Call boxes should be equipped with both visual and audible signals so as to be usable by both hearing and non-hearing people.*

### **Design of Accessible Building Entrances**

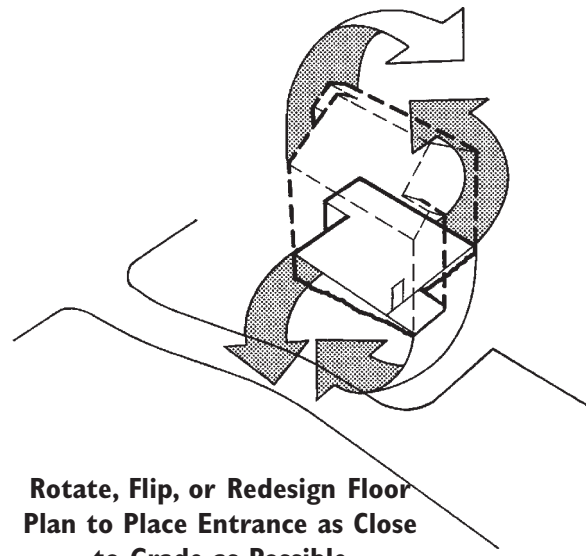
***Notes in italic type are recommendations only and are not required by ANSI or the Guidelines. All recommended features are helpful to people with and without disabilities.***

## SITE PLANNING FOR ACCESSIBLE ENTRANCES ON ACCESSIBLE ROUTES

The ease of establishing an accessible route at building entrances can be radically affected by the type of construction used and the placement and positioning of the building on the site. These factors should be considered along with others essential to successful early planning and design of a housing complex.

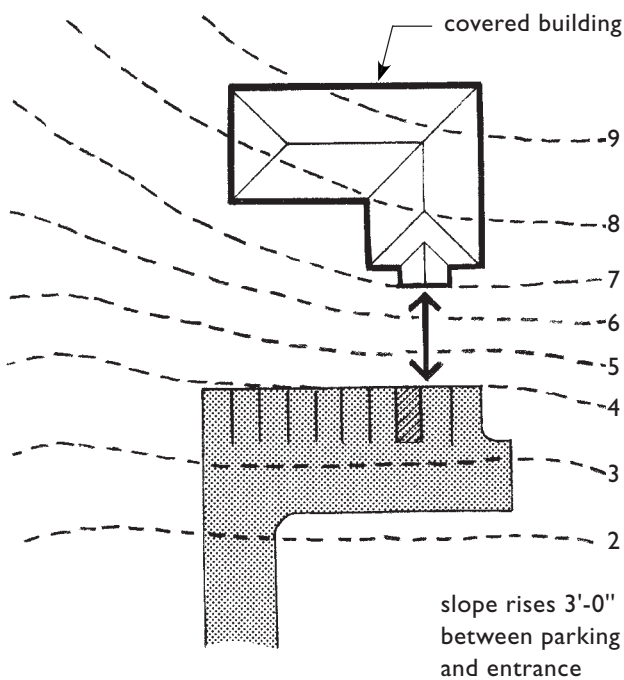
### Careful Building Placement

Regardless of the type of construction, the way in which a building is located on a site will affect accessibility at entrances. If entrances exist at locations where the floor level is close to the ground, accessibility will be easier and less expensive to provide. Sometimes plans can be rotated or flipped to bring entrances closer to grade. Entrances and

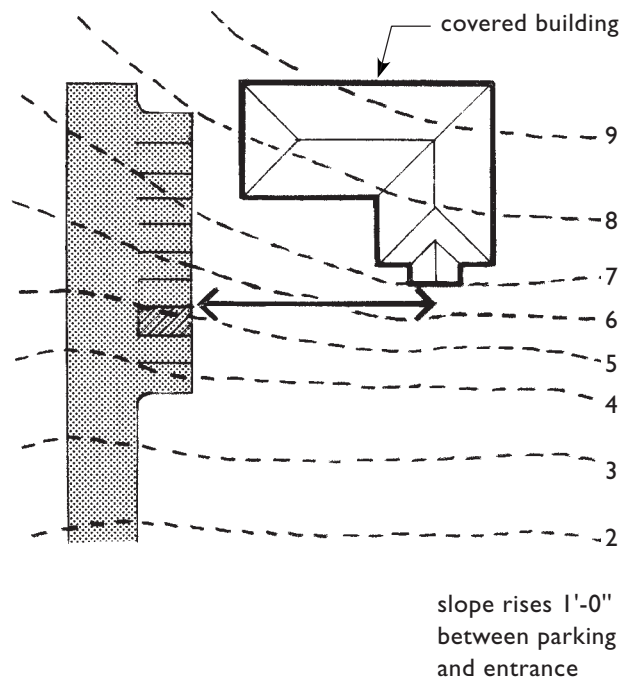


**Rotate, Flip, or Redesign Floor  
Plan to Place Entrance as Close  
to Grade as Possible**

parking often can be relocated to maximize use of existing grades. In some cases, the best solution is to redesign the proposed floor plan to place entrances at or as near grade as possible.



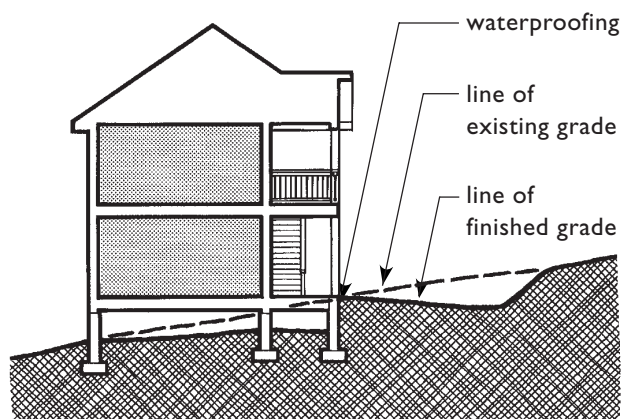
**Current Position of Parking Lot Makes Accessible  
Route Difficult or Impossible to Provide**



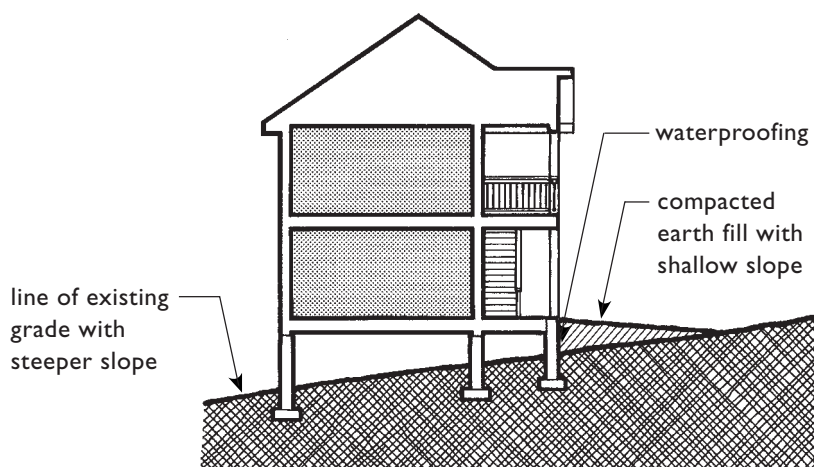
**Reorientation of Parking Area to  
Achieve Accessible Route**

## Earthwork and Site Grading

It is often possible to create accessible routes to entrances by means of earthwork and the grading of sites. On sloping sites, fill can be added or the land can be cut and graded to place the building entrance at ground level.



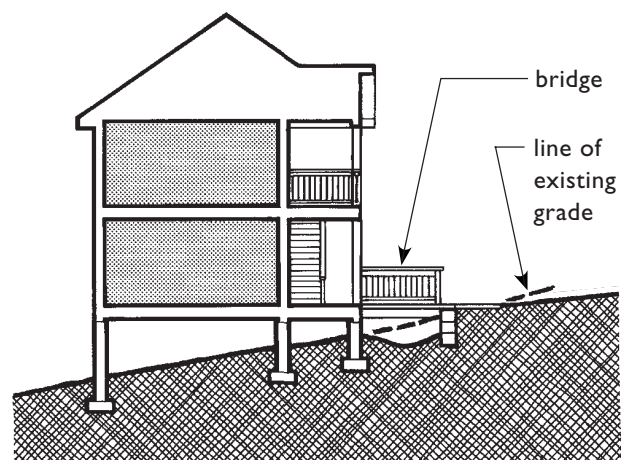
**Earth Cut Site Grading**



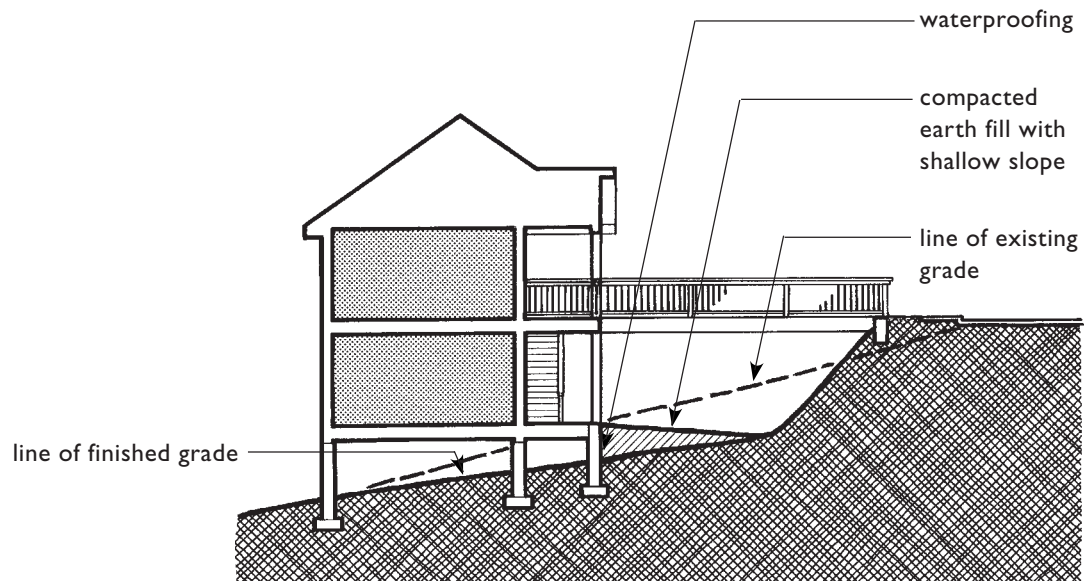
**Earth Fill at Entrance**

## Bridges and Elevated Walks

Bridges or elevated walkways may be a good solution to providing an accessible route to an entrance on a sloping site, particularly where the building is approached from an uphill location. Combinations of techniques can be used on some sites to provide accessible entrances on more than one level. Bridges usually can be made level and thus easy and safe for everyone.



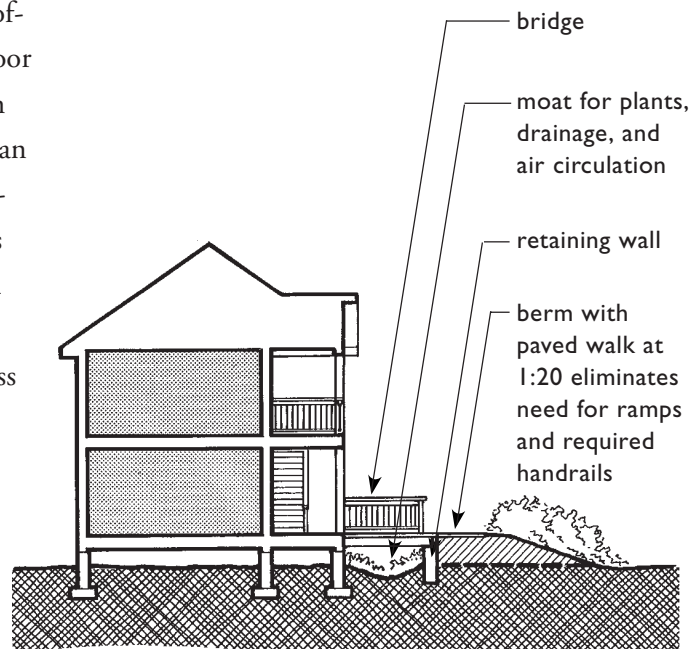
**Bridges to Uphill Locations  
on Sloping Sites**



**Combination Earth Cut and  
Accessible Bridge/Walk to Entrances**

### **Earth Berms and Bridges**

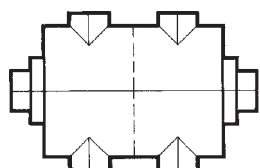
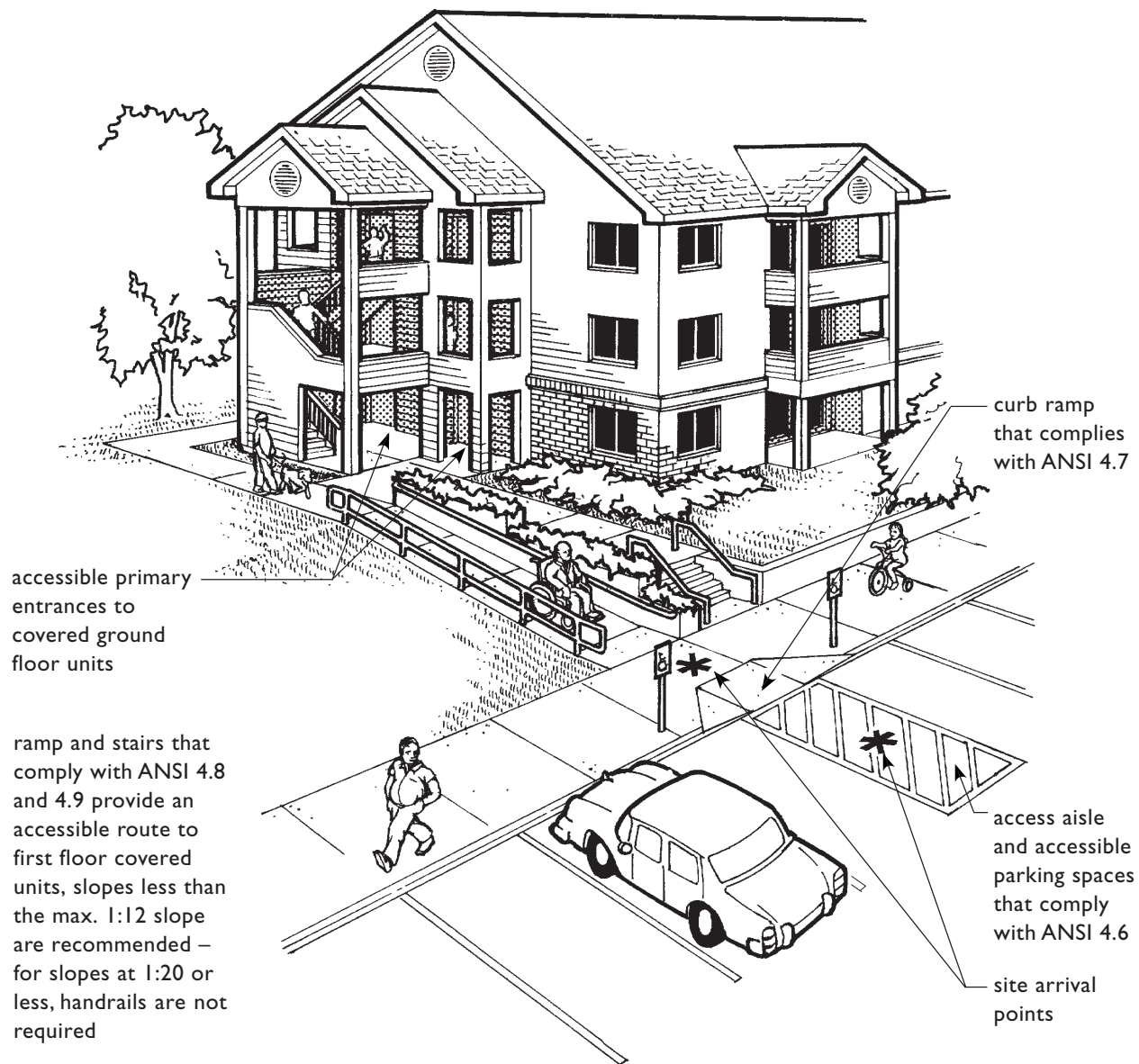
On flat or irregular sites an accessible route to an above grade entrance might be created by providing a low retaining wall, an earth berm, and a bridge. There are several advantages to this method. The retaining wall is held several feet away from the foundation forming a moat that allows drainage and ventilation to occur at the foundation and eliminates the need for additional waterproofing. The bridge from the retaining wall to the floor of the building can be level. The sloping walk on the berm, if kept flush with the earth and less than 1:20 slope, will not require handrails, thus eliminating the awkward sloping appearance of access ramps and their handrails. Plants on and around the berm and in the moat create an attractive landscaped garden entrance rather than an “access ramp.”



**Earth Berm and Bridge**

In this site configuration a ramp provides the accessible route from several possible site arrival points to the building entrance. Often a ramp can be combined with stairs and a planter to create attractive entrances that serve the needs of a wide range of people.

ground floor units are covered in this building without elevator(s)

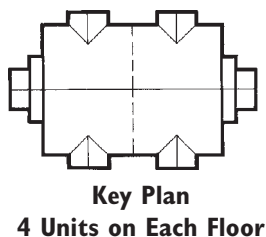
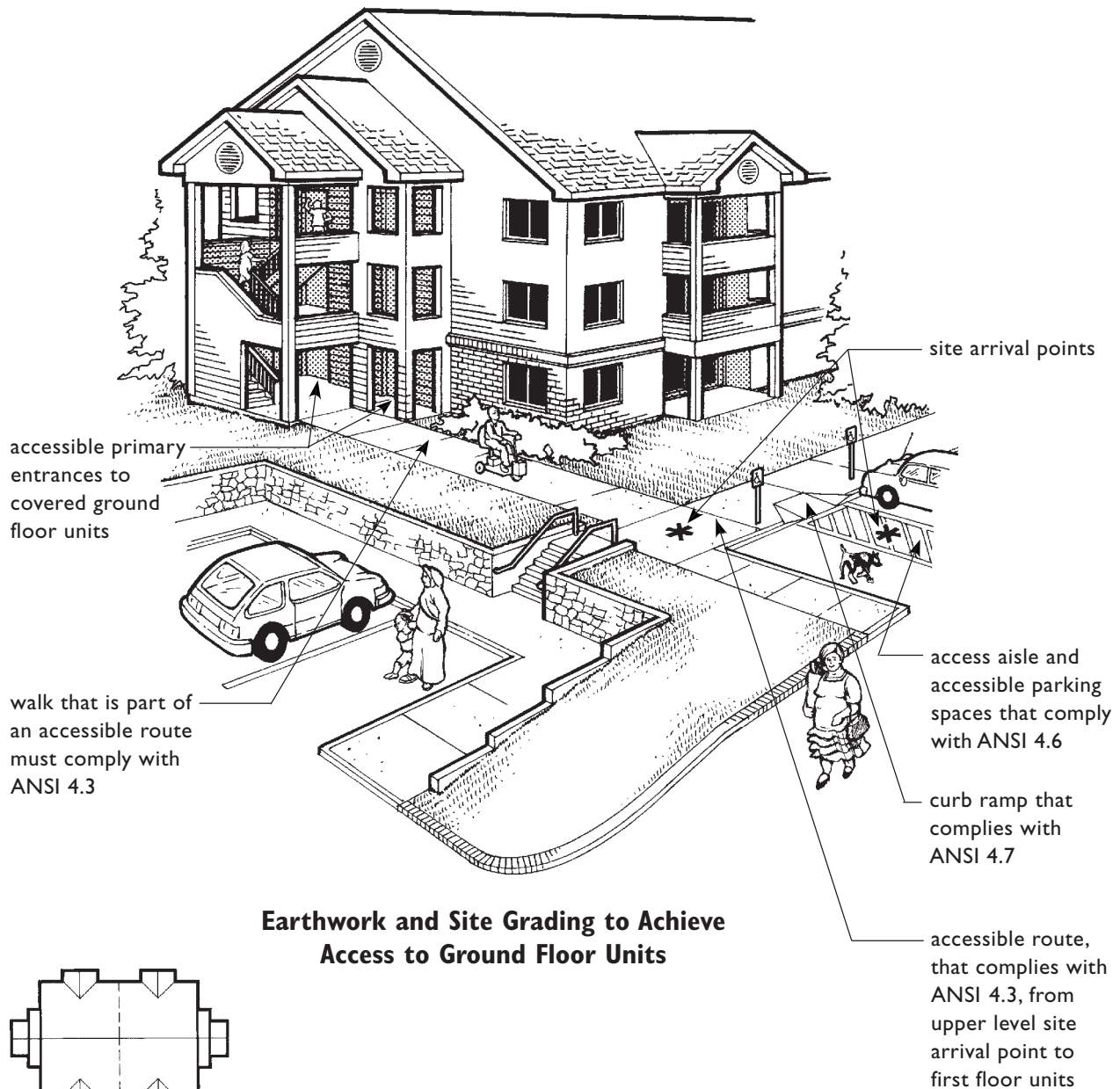


**Key Plan**  
**4 Units on Each Floor**

**Site Grading  
with Combined Ramp and Stairs  
to Create Access to First Floor Units**

In this site configuration the parking for the building is divided between two levels, with the accessible parking provided on the upper level. This solution creates the possibility of an accessible route, with little or no slope, to the building entrance and may reduce the required amount of earthwork necessary for a larger parking lot on the upper level that would serve the entire building.

buildings without one or more elevators, only ground floor units are covered



In this site configuration a combination of level walkway and bridge is used to create an accessible route to the units on the second floor. On such sloping sites, bridges can provide convenient, safer, and direct access to the upper level.

Access by level bridge and walk provides an accessible route from site arrival points to entrance of two covered units on the second floor level on this side of the building.

stairs down to two lower level units and up to two top floor units

Accessible route from lower level site arrival point to the accessible ground floor entrances to two covered units on the lower level ground floor at the far end of the building.

this walk is part of an accessible route and must comply with ANSI 4.3

If the resulting design plan was such that the two units on the lower ground floor at the near end of the building were on an accessible route, those units would also be covered.

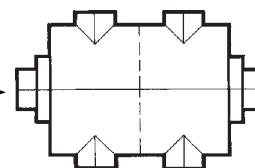
curb ramp that complies with ANSI 4.7

upper level site arrival point

access aisle and accessible parking that comply with ANSI 4.6

### Bridge to Achieve Access to Second Floor Units

this building has four dwelling units on each floor with separate unit entrances and stairs at each end

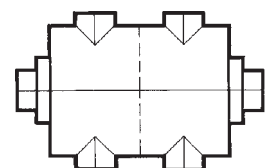
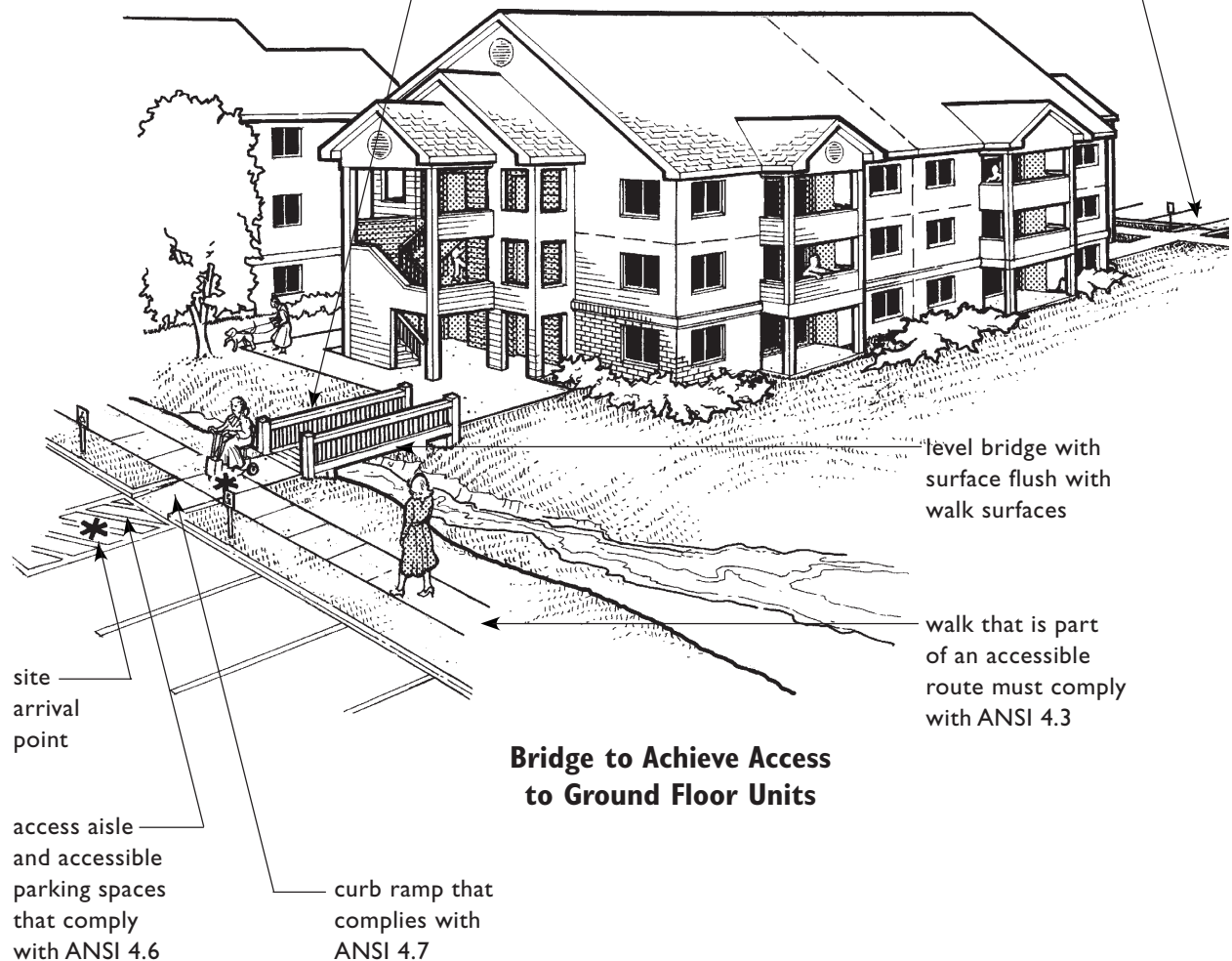


**Key Plan**  
4 Units on Each Floor

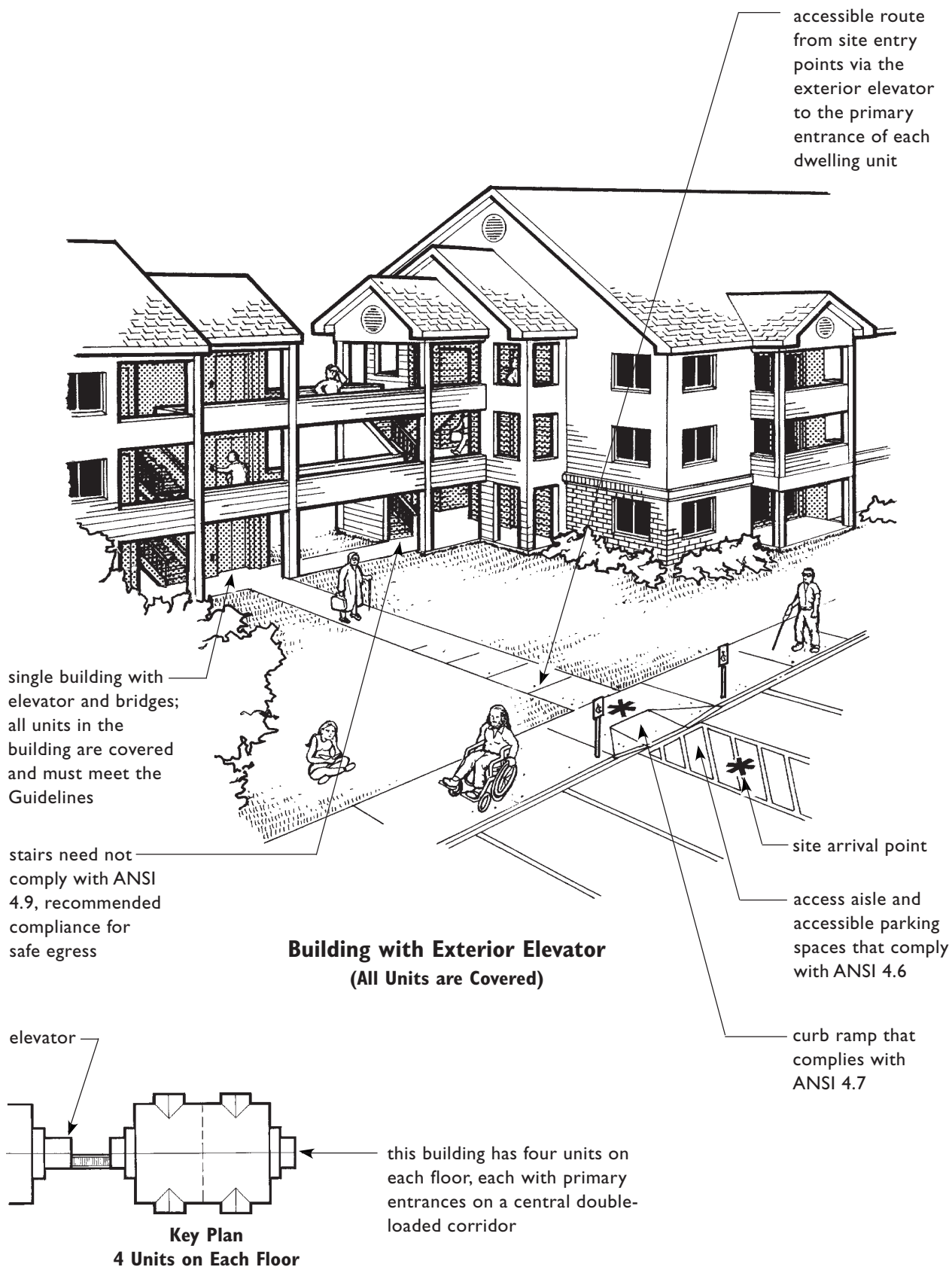
In this site configuration an ordinary site feature, a bridge over a stream, has been integrated with a level walkway to create an accessible route to the ground floor units of the building.

access by level bridge and walk provide an accessible route from site arrival points to primary entrances to two ground floor covered units at the near end of the building

accessible route from site arrival point to accessible primary entrances to two ground floor units at the far end of the building



**Key Plan**  
**4 Units on Each Floor**



## COVERED DWELLING UNITS AND THEIR ACCESSIBLE ENTRANCES

In buildings containing multiple dwelling units, common use exterior entrances and individual exterior entrances to ground floor units are required by the Guidelines to be accessible, unless it is impractical to do so as determined by one of the site impracticality tests discussed in the next section on pages 1.38 through 1.58.

It is expected that all multifamily buildings will have covered dwelling units. However, the configuration of the building; the location of the entrances; the determination of which is the ground floor(s) (there can be more than one); the placement, origin, and destination (range) of elevators; and site impracticality will affect which units in multifamily buildings are covered and where or how accessible entrances are provided. This section of the manual discusses coverage and accessible exterior entrances in

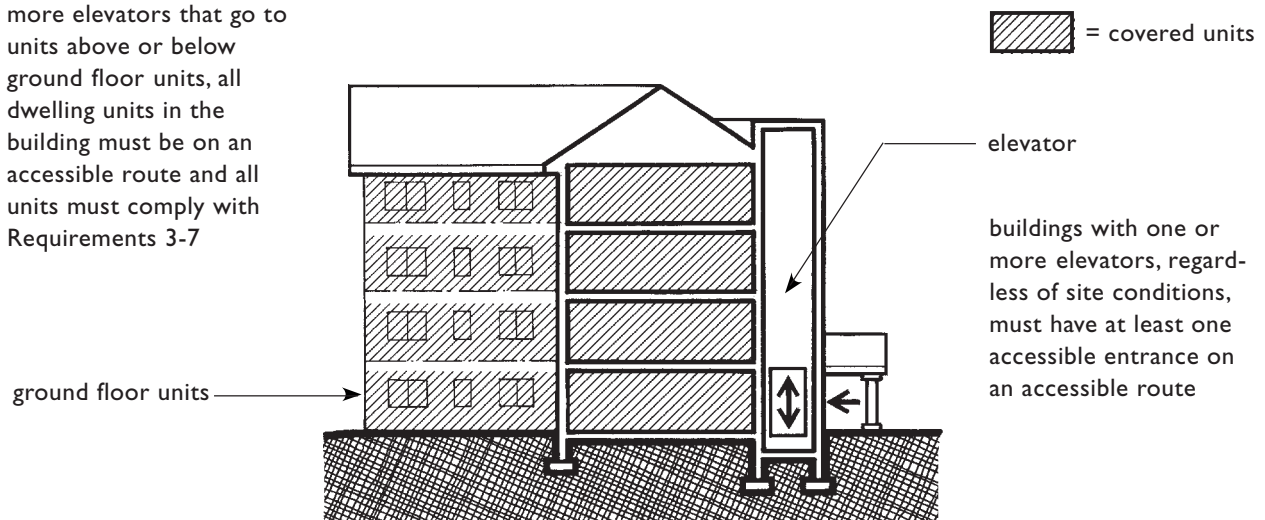
1. buildings having one or more elevators,

2. buildings with separate ground floor entrances to dwelling units, and
3. buildings with common entrances.

Entrances to covered dwelling units from interior halls, corridors, or accessible common use spaces are discussed in Chapter 3: “Usable Doors.”

Based on the legislative history of the Fair Housing Act, it is expected that **only** extreme conditions of a site may make it impractical to provide an accessible route to entrances of some covered dwelling units. The Guidelines allow, in some instances, the number of covered units to be reduced where such impracticality can be demonstrated. Requirement 1 of the Guidelines includes two site impracticality tests that can be used to determine if an accessible route at a required entrance is impractical due to extreme terrain or site conditions. The tests are referenced in this section and their applications are described in detail on pages 1.38 to 1.58 of this chapter.

in a building with one or more elevators that go to units above or below ground floor units, all dwelling units in the building must be on an accessible route and all units must comply with Requirements 3-7



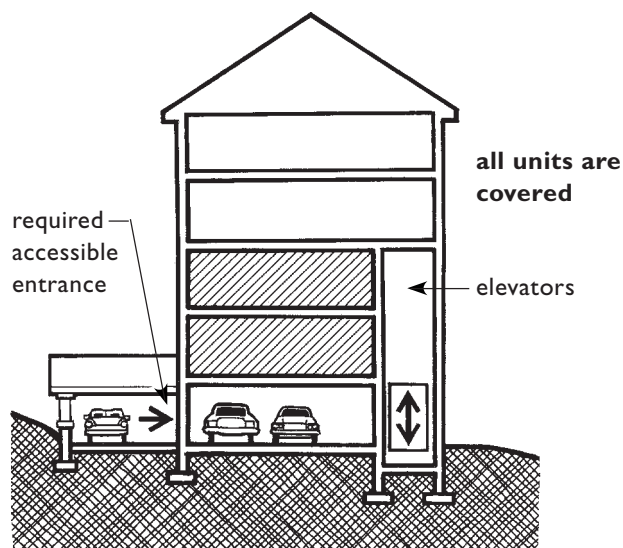
**In Buildings with One or More Elevators:  
(Elevator Buildings) All Units are Covered**

## BUILDINGS WITH ELEVATORS

All dwelling units are covered in buildings having one or more elevators and one or more common entrances. The Guidelines require that such buildings with elevators (elevator buildings) have at least one accessible entrance on an accessible route, regardless of the terrain or unusual characteristics of the site. In other words, site impracticality as defined in the tests discussed on pages 1.38 through 1.58 is not allowed for “buildings having one or more elevators.”

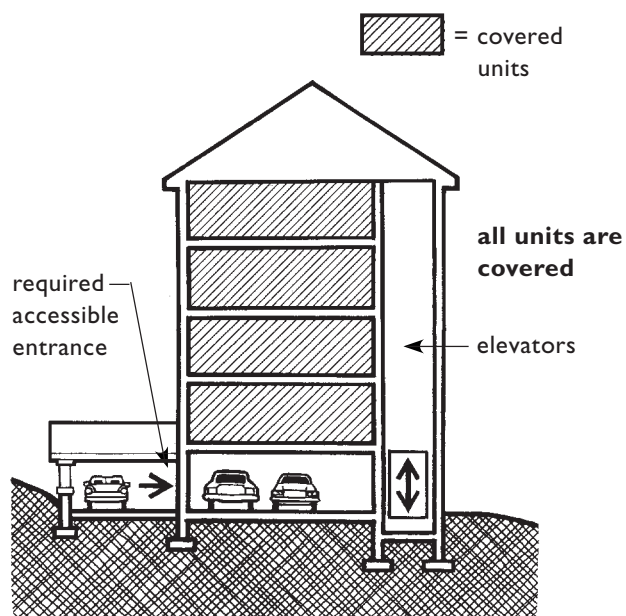
The rationale for disallowing site impracticality for such buildings includes the assumption that a building having elevators is a mid- to high-rise building and that all floors are accessible via the elevators. In addition, it is expected that the site work performed when building such elevator buildings generally results in a finished grade that would make an accessible route into and through the building practical. For a building to meet the Fair Housing Act definition of a “building having one or more elevators” (elevator building), it must have at least one elevator that travels from an entrance level to a floor containing dwelling units that is above or below a “ground floor.” If such an elevator is planned, it must go to all floors that contain dwelling units. Thus, it is not acceptable to provide elevator service to some floors or units and not others.

In the building shown in the upper right column on this page, the elevator only goes to the first and second floors containing dwelling units. This is unacceptable because the elevator is going to a floor other than a ground floor (floor two), therefore, floors three and four also must have access via the elevator.



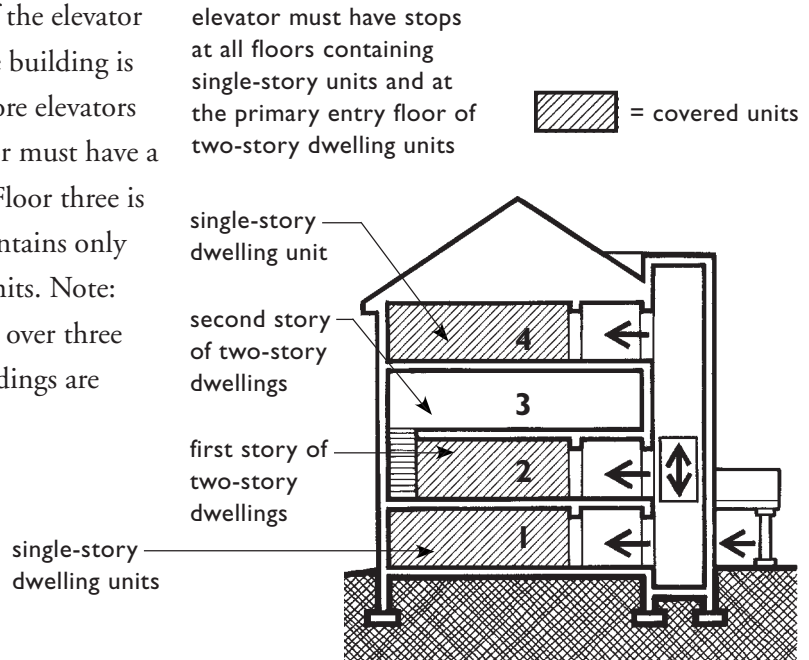
**✗ Termination of Elevator as Shown in this Building is NOT Acceptable**

when an elevator provides access to dwelling units other than dwelling units on a ground floor, it becomes a “building with one or more elevators” and the elevator must go to all floors and all dwelling units are covered



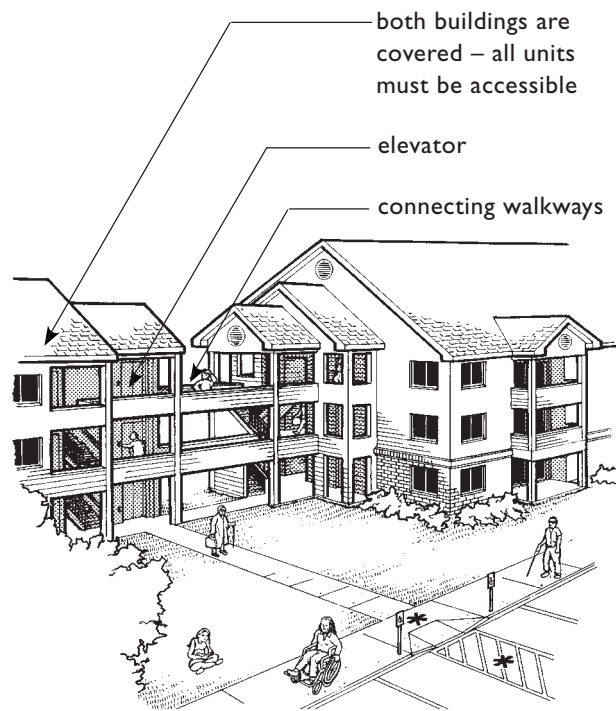
**Elevators Must Provide Access to All Dwelling Units in Elevator Buildings**

In the example to the right, if the elevator stops at floors other than just one, the building is classified as a building with one or more elevators (an elevator building), and the elevator must have a stop at the second and fourth floors. Floor three is not required to have a stop since it contains only second floors of two-story dwelling units. Note: most building codes require buildings over three stories to have elevators. All such buildings are covered by the Guidelines.



**Elevators Must Provide Access to Primary Entry Floors of Two-Story Dwellings in Elevator Buildings**

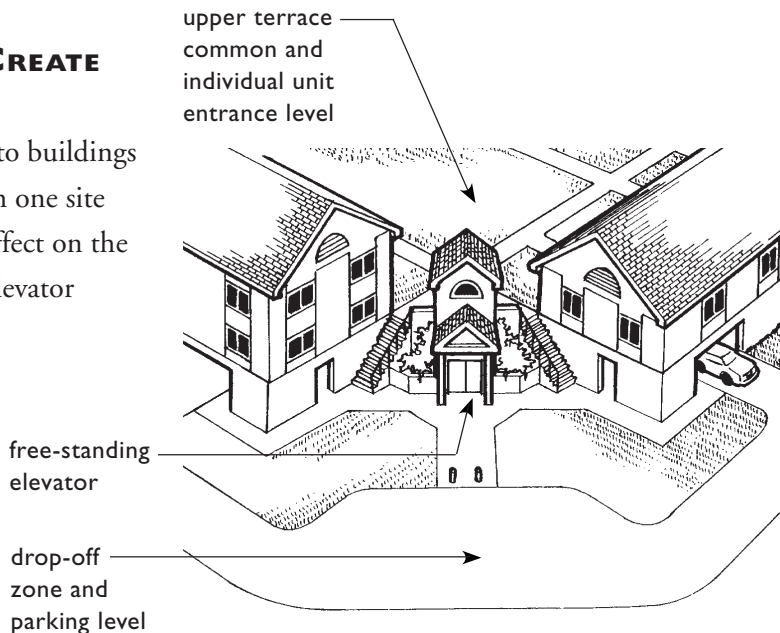
If an elevator in or at one building is connected to other buildings via overhead walks or bridges, the connectors must be accessible and all the connected buildings are covered.



**A Central Elevator Serving a Building with Two Wings**

### FREE-STANDING ELEVATORS FOR SITE ACCESS DO NOT CREATE ELEVATOR BUILDINGS

Free-standing elevators not connected to buildings serve as part of an accessible route from one site level to another and do not have any effect on the building's status as an elevator or nonelevator building.



**Free-Standing Elevators for Site Access  
Do Not Create Elevator Buildings**

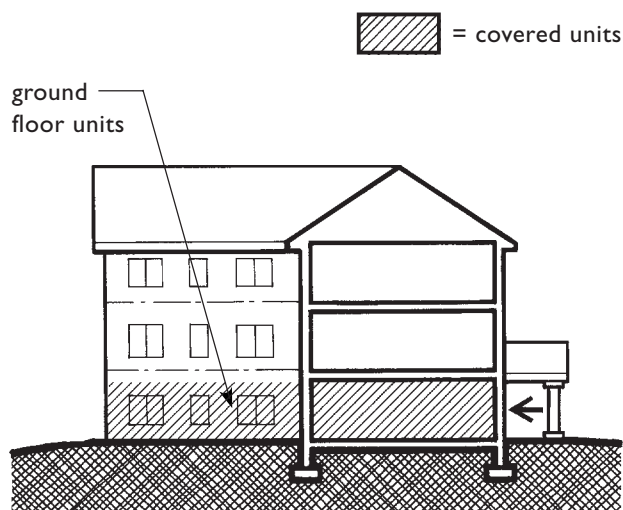
### BUILDINGS NOT HAVING ELEVATORS

In buildings not having elevators, only ground floor dwelling units are covered and each dwelling unit must be on an accessible route and meet Requirements 3-7.

Buildings not having elevators must have at least one accessible entrance on an accessible route, unless prohibited by extreme terrain or unusual site characteristics. See site impracticality section, page 1.38. Note, in buildings either with or without elevators, more than one accessible entrance may be required when:

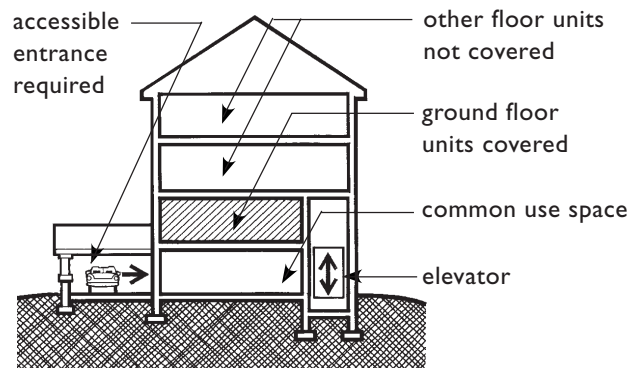
1. there is more than one ground floor,
2. there is a split-level ground floor, or
3. units are clustered on the ground floor and each cluster has a separate entrance.

These situations are covered on the next several pages.



**In Buildings Not Having Elevators  
(Nonelevator Buildings)  
Only Ground Floor Units Are Covered**

In some circumstances the “ground floor” units that are covered may not actually be at grade level. For example, when common use spaces such as parking, meeting rooms, shops, etc. occupy the floor at grade, the first floor containing dwelling units above or below that level will be the designated “ground floor” for purposes of the Guidelines. All dwelling units on such levels must meet Requirements 3-7 and be on an accessible route.

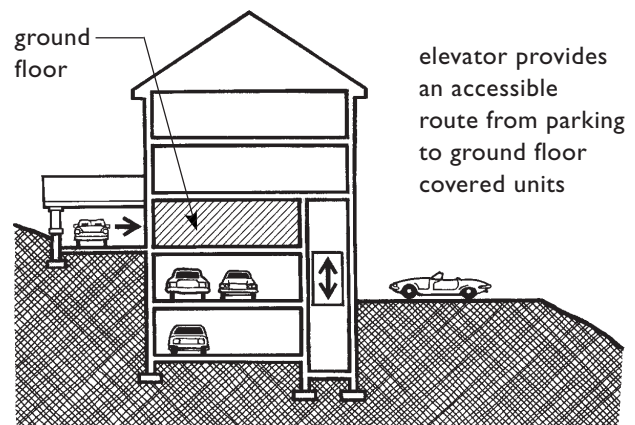


**Elevator to First Floor of Dwelling Units Above Grade or Entrance Level Does Not Make a Building with One or More Elevators (a Covered Elevator Building)**

 = covered units

It is important to note that some buildings may contain an elevator and not be considered a “building having one or more elevators” for purposes of the Guidelines. For example, when an elevator travels from a garage or other entry level not containing dwelling units only to a “ground floor” containing dwelling units, these “ground floor” units are covered; however, the building is not a “building having one or more elevators” (elevator building) and the elevator is not required to travel to all floors.

If a building elevator is provided only as a means of creating an accessible route from parking to dwelling units on a ground floor, the building is not considered an elevator building. In this case, the dwelling units on the “ground floor,” plus one of each type of public and common use area, must comply with the Guidelines.



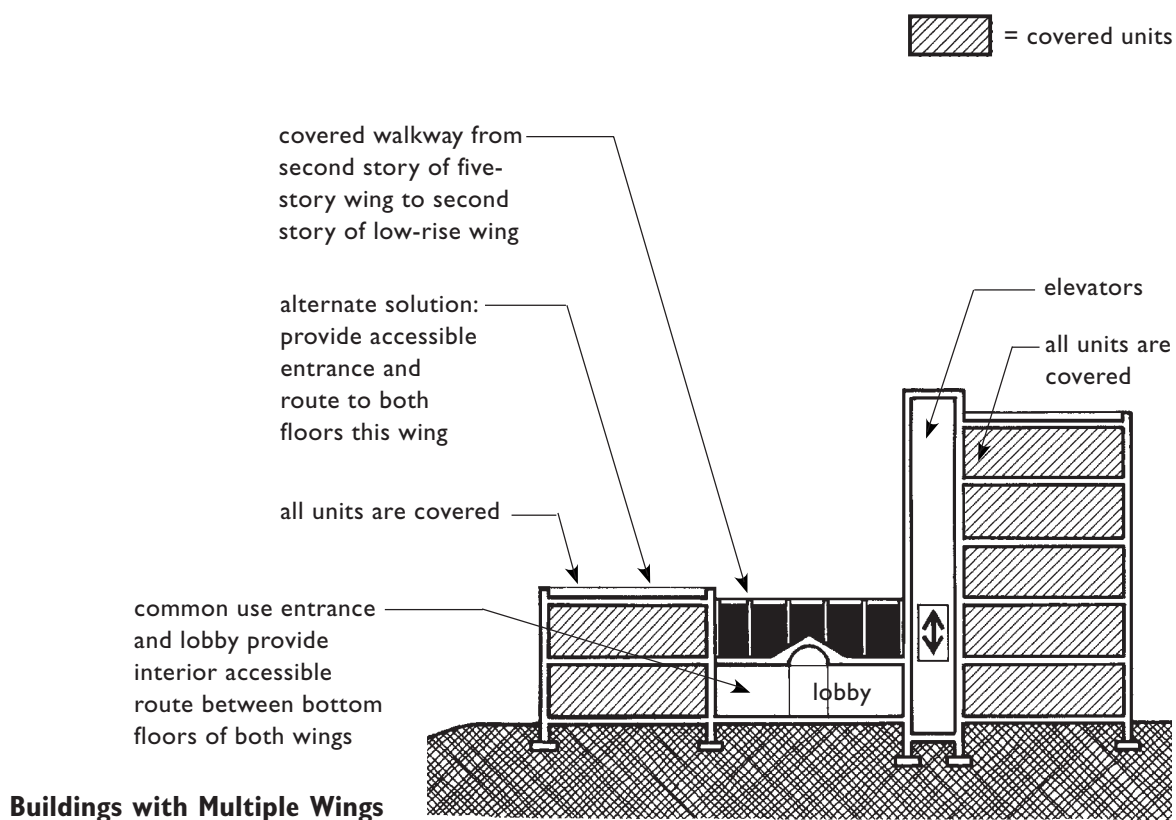
**Elevators for Access to Ground Floor Units Do Not Make an Elevator Building**

### **BUILDINGS HAVING CONNECTED ELEVATOR AND NON-ELEVATOR WINGS**

Buildings having multiple wings of different configurations may have to provide more than one entrance and possibly more than one elevator. If any wing has an elevator, all of the units in the building are covered and must be on an accessible route.

In the example below, a single building has two wings, one of which has an elevator. A lobby or similar public and common use space connects the wings and serves both wings. All the units in the building are covered, therefore, the building either must have an additional elevator serving the two-story wing, or an alternative means of access to the

dwelling units on the second floor of the two-story wing. In addition, since the two wings share the common use entrance, lobby, and related amenities, such as mailboxes, reception desk, etc., there must be an interior accessible route between the lobby and the two-story wing. In this example, an accessible route has been created from the second floor of the five-story wing to the second floor of the two-story wing by means of a covered walkway, thereby providing the necessary access.



## BUILDINGS WITH SEPARATE EXTERIOR UNIT ENTRANCES

### BUILDINGS WITH SEPARATE EXTERIOR GROUND FLOOR UNIT ENTRANCES

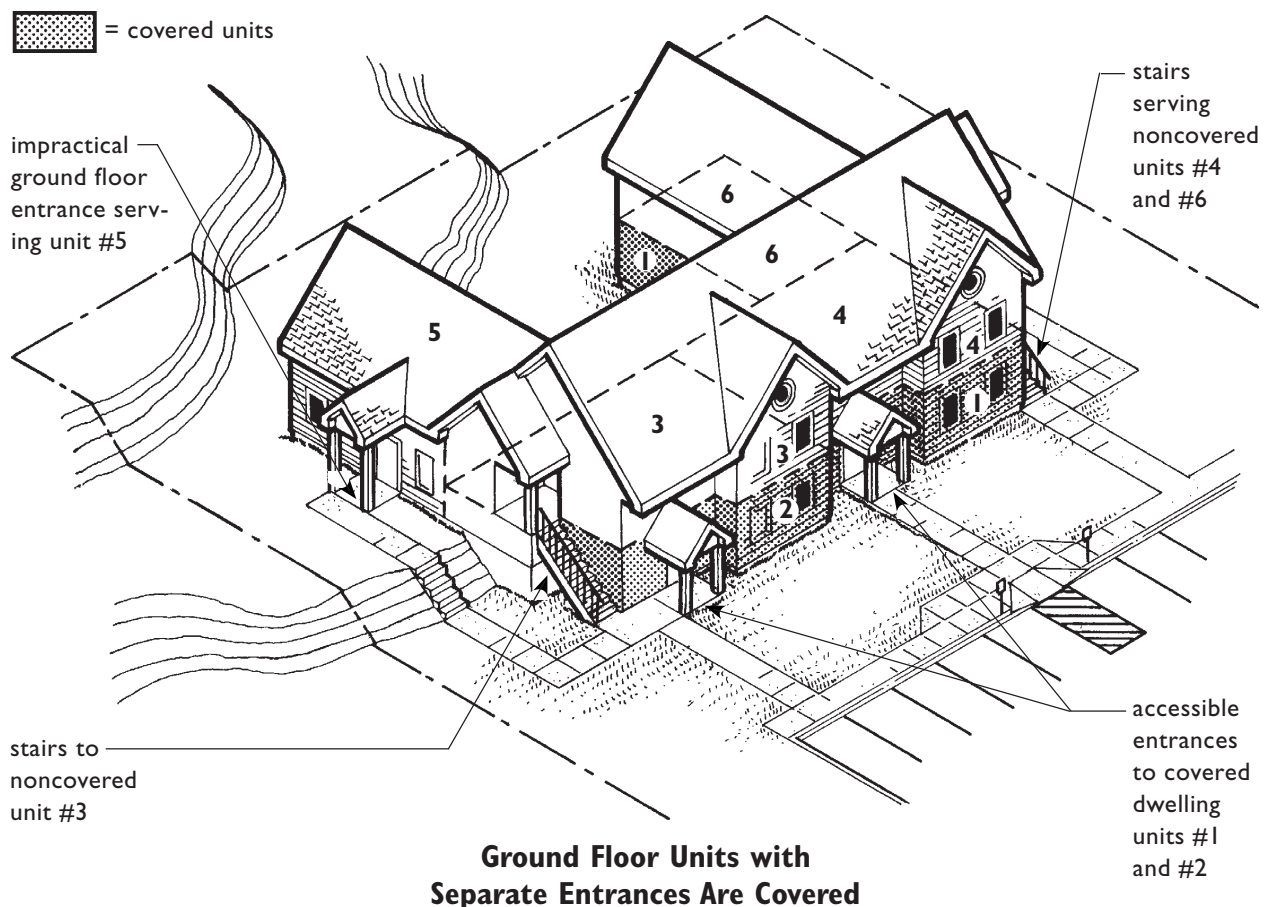
Where a building has ground floor units, each with its own exterior entrance, the Guidelines provide that each of these ground-floor units shall:

1. have an accessible entrance,
2. be on an accessible route, and
3. meet all other design requirements of the Guidelines.

The only exception applies to ground floor units where terrain or unusual characteristics of the site make an accessible entrance on an accessible route impractical.

The example below is a single non-elevator building on a site and has multiple entrances.

Regardless of which site impracticality test is used, a minimum of 20% of the ground floor units must be accessible, and possibly more, based on the results of the test. The individual building test was used, and resulted in site impracticality at Unit #5. The site was not impractical for Units #1 and #2, and therefore, those units must be made accessible. Two out of three units = 66%, so the minimum of 20% has been satisfied, and no additional ground floor units must be made accessible. See site impracticality on page 1.38.

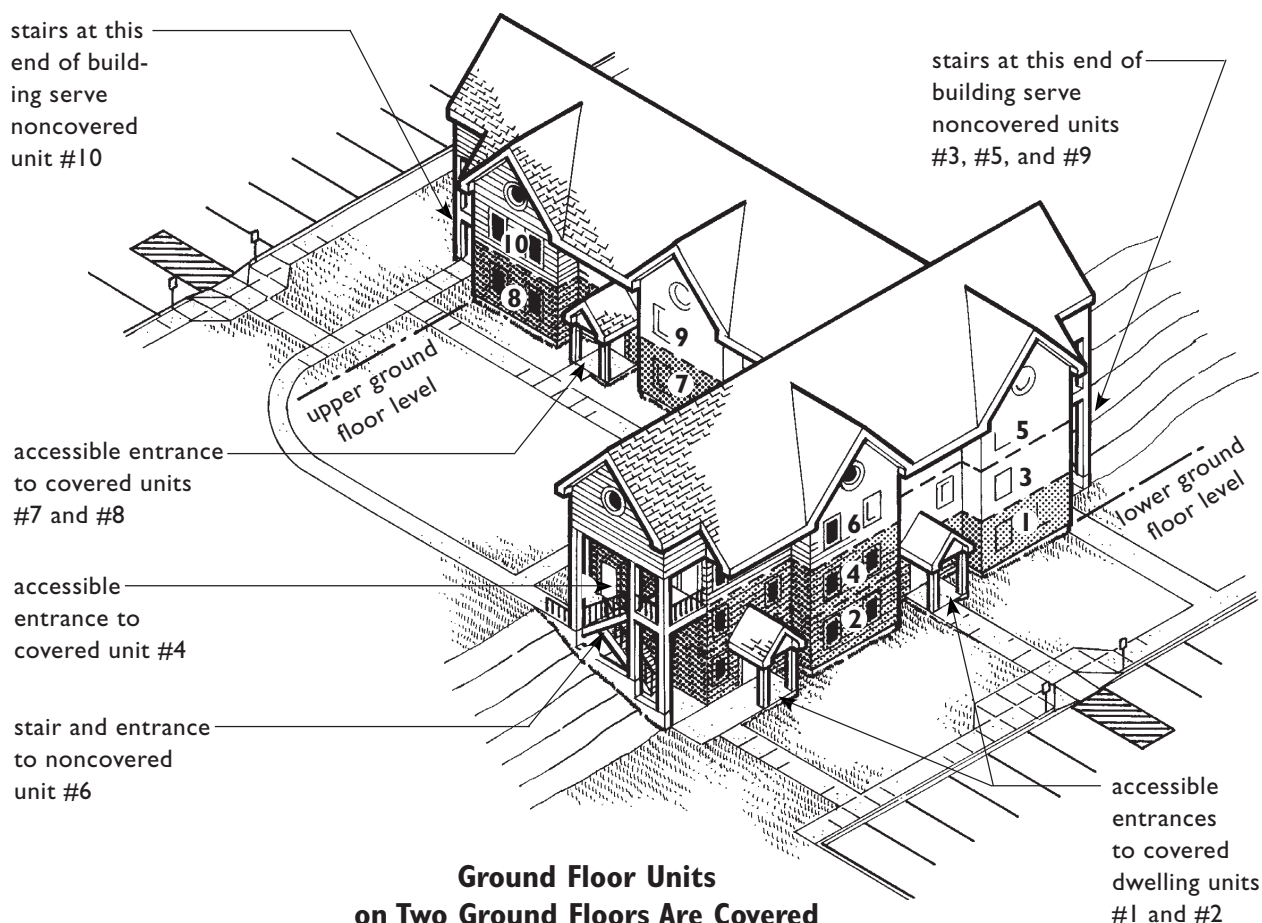


## BUILDINGS WITH SEPARATE GROUND FLOOR UNIT ENTRANCES ON TWO OR MORE GROUND FLOORS

Where a building has ground floor units with their own individual entrances on two or more ground floors, the Guidelines provide that each of these entrances shall be an accessible entrance on an accessible route. The only exception to this applies to ground floor units where terrain or unusual characteristics of the site make an accessible entrance impractical, see site impracticality tests, page 1.38.

 = covered units

Since entrances were planned on both ground floors and all ground floor units are covered, each must have an accessible entrance on an accessible route and meet the other design requirements of the Guidelines.

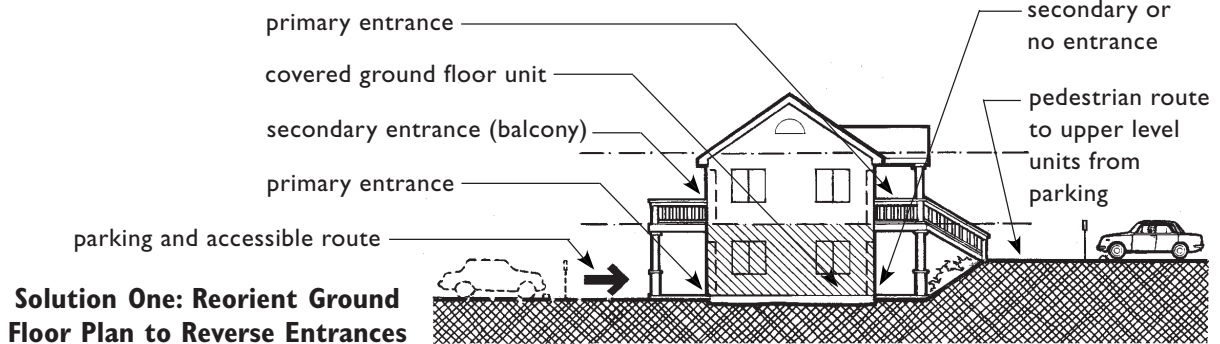
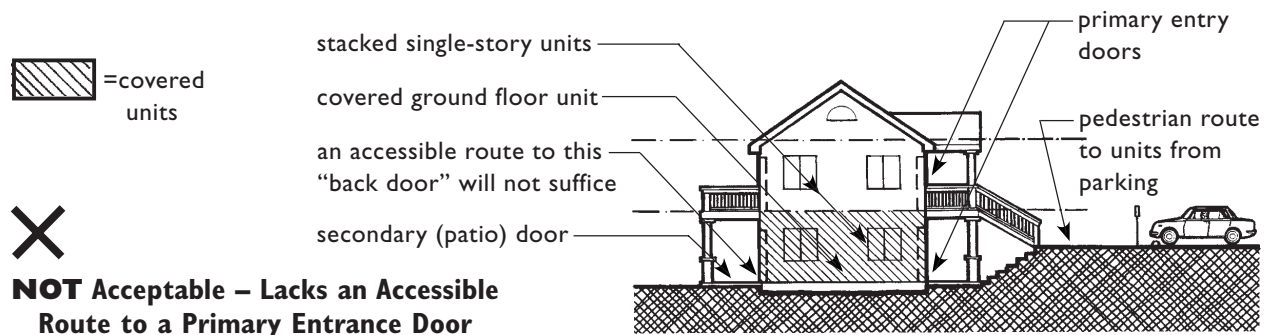


## BUILDINGS WITH SEPARATE UNIT ENTRANCES HAVING SPLIT-LEVEL APPROACHES

Apartments with split-level approaches to their entrances typically cannot provide an accessible route from parking or other pedestrian arrival points to either lower or upper level primary entrances. Redesign is necessary to ensure an accessible building entrance on an accessible route to ground floor units. Note, however, that simply

adding an accessible route to the secondary, rear entry is not acceptable as that results in “back door” access. See the first illustration and Solution One.

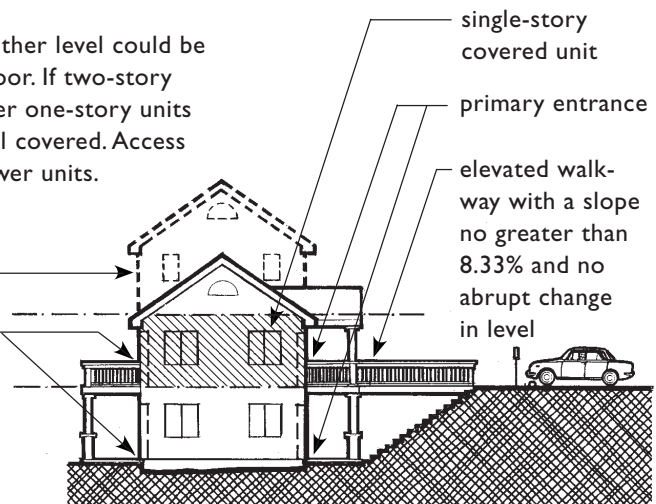
In Solution Two, regrading and the addition of a bridge provides access to the upper level, making that level the ground floor. Because no primary entrance was planned at the rear of the lower level units, and since there is no requirement to have more than one ground floor, an accessible route is not required to those units.



Solution Two is for a building having single-story units on each floor. Note, however, that if multistory units are stacked over the single-story units, then the building is still covered, and access to the single-story units would be required, as shown in Solution One.

If the units are one story, either level could be designated as the ground floor. If two-story townhouses are stacked over one-story units on grade, the building is still covered. Access must be provided to the lower units.

two-story townhouse  
secondary entrances



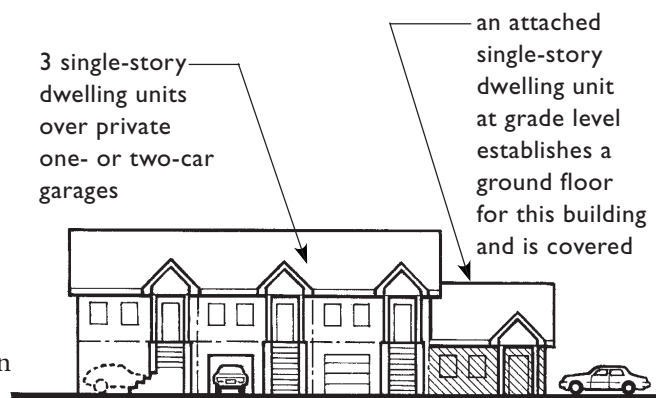
**Solution Two: Regrade and Add Bridge  
from Parking to Second Story Entrance**

## BUILDINGS WITH SEPARATE GROUND FLOOR UNIT ENTRANCES OVER PRIVATE GARAGES (CARRIAGE UNITS)

### Carriage House Units

Carriage houses in which the garage footprint is used as the footprint for the remaining floor or floors of the units are not required to meet the design and construction requirements. (See December 16, 1991 memorandum from Frank Keating at back of Appendix C.)

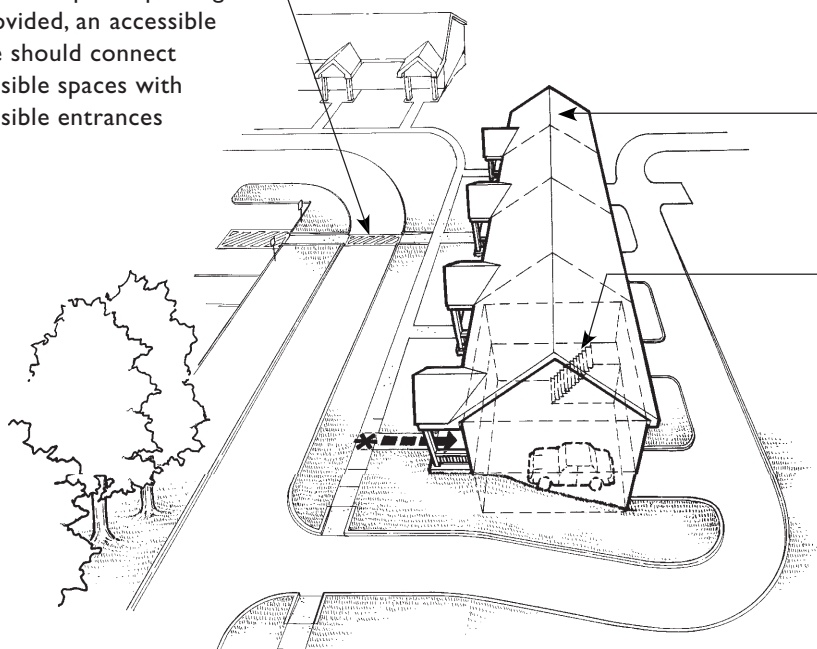
If buildings containing carriage units have one or more units at grade level with an entrance on an accessible route, the grade level unit establishes a ground floor for the building and is covered. There is no requirement for there to be more than one ground floor nor for other units in the building on the second or elevated floor to be accessible.



**Carriage Units in Buildings Having One or More Grade Level Units Are Not Covered**

covered units = 

if visitor or public parking is provided, an accessible route should connect accessible spaces with accessible entrances



**Carriage Units Having an Accessible Route to an Entry Are Covered**

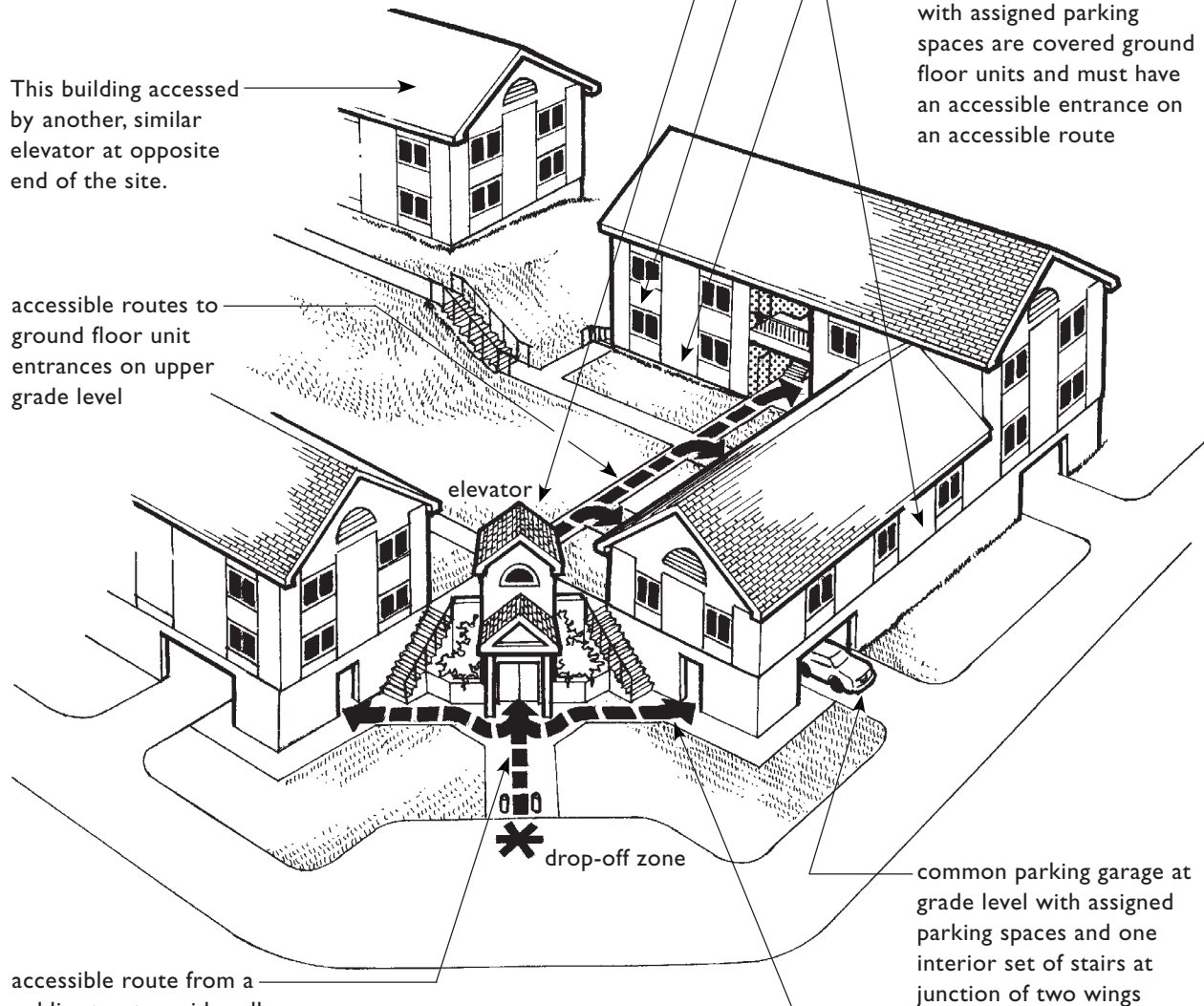
This elevator serves several buildings on the site. Although this configuration meets the requirements of the Guidelines, it subjects people with disabilities to using a more circuitous route from the dwelling unit entrances to parking and exposes them in an unequal way to inclement weather conditions.

This building accessed by another, similar elevator at opposite end of the site.

accessible routes to ground floor unit entrances on upper grade level

single-story walk-up units on second floor above common garage space are not covered

single-story dwelling units over a common garage with assigned parking spaces are covered ground floor units and must have an accessible entrance on an accessible route



**Single-Story Ground Floor Dwelling Units with Separate Entrances Over Common Use Parking Garages**

elevator to create an accessible route from parking to ground floor does not make these elevator buildings

accessible route from parking to accessible common or individual ground level entrances to covered units

## BUILDINGS WITH COMMON ENTRANCES

### Buildings with Ground Floors

#### Over Shops or Garages

Where the first floor containing dwelling units in a building is above grade, all units on that floor are covered and must be served by a building entrance on an accessible route. This floor will be considered a ground floor, thus making dwelling units over retail stores, garages, or other common use spaces covered units.

an accessible route to dwelling unit entrances must be provided

grade level is used entirely for parking, shops, or other common use spaces

third floor single-story units are not covered

covered single-story units

ground floor for purposes of the Guidelines

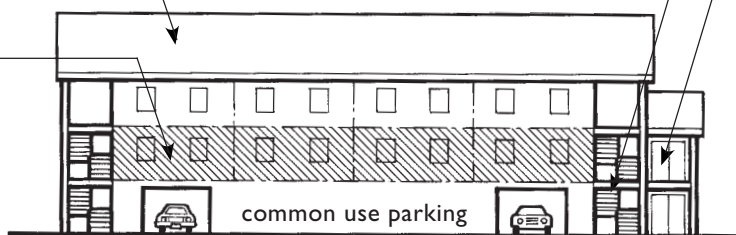


three-story building of single-story dwelling units on a double-loaded open-air corridor

single-story units above common use parking at grade level are covered

elevator, ramp, lift, elevated walkway, or bridge is required to provide accessible route to covered units

elevator stairs



Note: if the elevator is also taken to the next level, the building becomes a building with one or more elevators and all floors and units must comply.

### Walk-Up Dwelling Units Over Garages, Shops, and Other Public or Common Use Spaces Are Covered

If one or more single-story dwelling units with an accessible entrance on an accessible route are located at grade level in buildings otherwise having public or common use parking or shops at grade level, a new grade level ground floor is established and only the grade level units are covered.

shops or common use parking

covered single-story unit



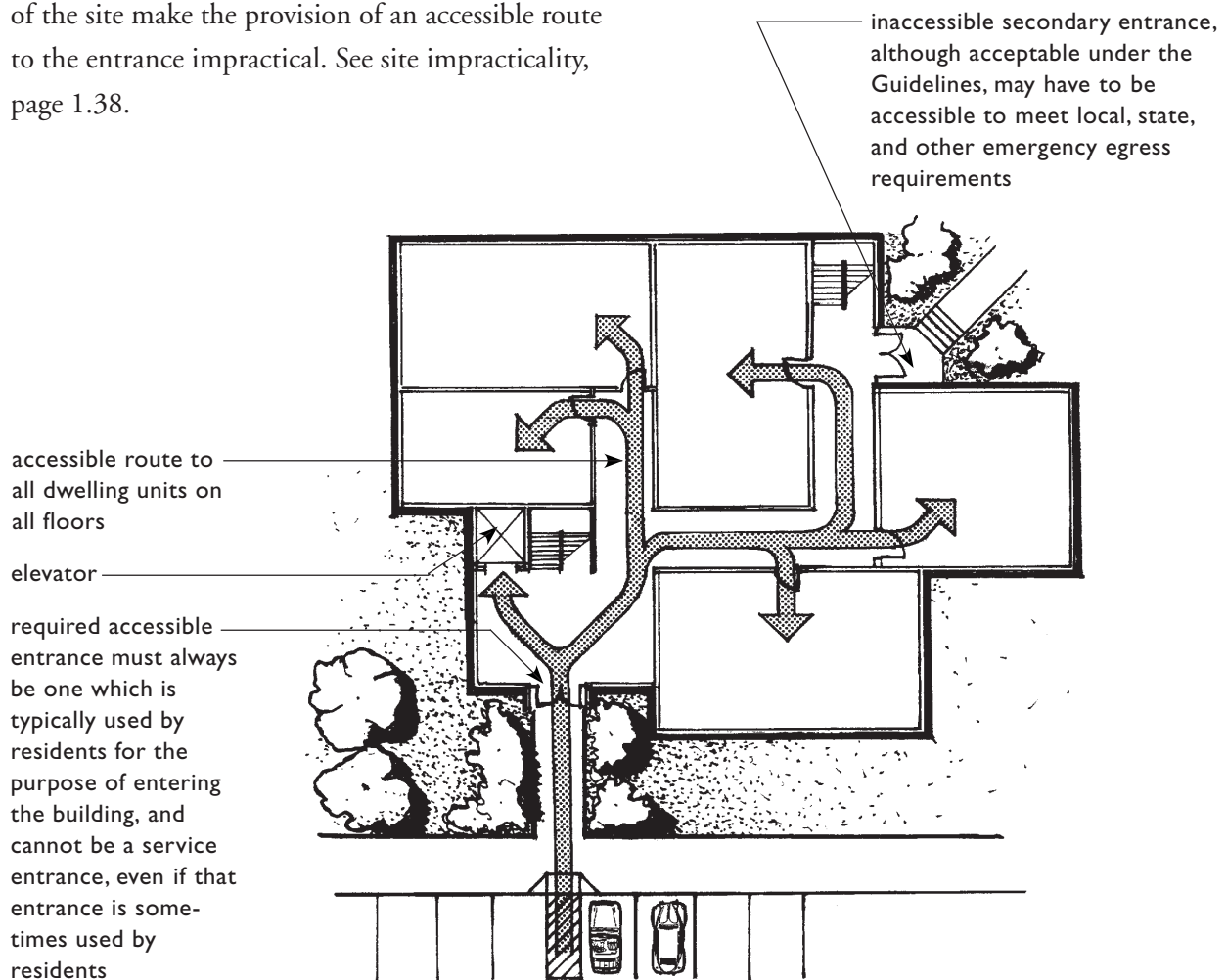
### One or More Grade Level Accessible Units Establishes a Ground Floor and Eliminates Need for Accessible Routes to Units Over Garages or Shops

 = covered units

## BUILDINGS WITH ONE OR MORE COMMON ENTRANCES

When a building has one or more common entrances, the Guidelines provide that at least one of these entrances shall be accessible and shall be on an accessible route to **all** dwelling units in buildings with one or more elevators, and to all ground floor units in nonelevator buildings. Examples of how this applies to specific buildings and sites follow. The only situation where an accessible entrance is not required is when there is a single building with a single entrance on a site with no elevator, and the terrain or unusual characteristics of the site make the provision of an accessible route to the entrance impractical. See site impracticality, page 1.38.

This is a single building on a site. It has two common entrances and an elevator serving multiple floors. Because it is a building with one or more elevators (an elevator building), all units in the building are covered, and at least one common entrance must be accessible and on an accessible route from a public street or sidewalk or other pedestrian arrival point, regardless of the terrain or unusual characteristics of the site; site impracticality tests do not apply for elevator buildings.



**Buildings with Common Entrances**

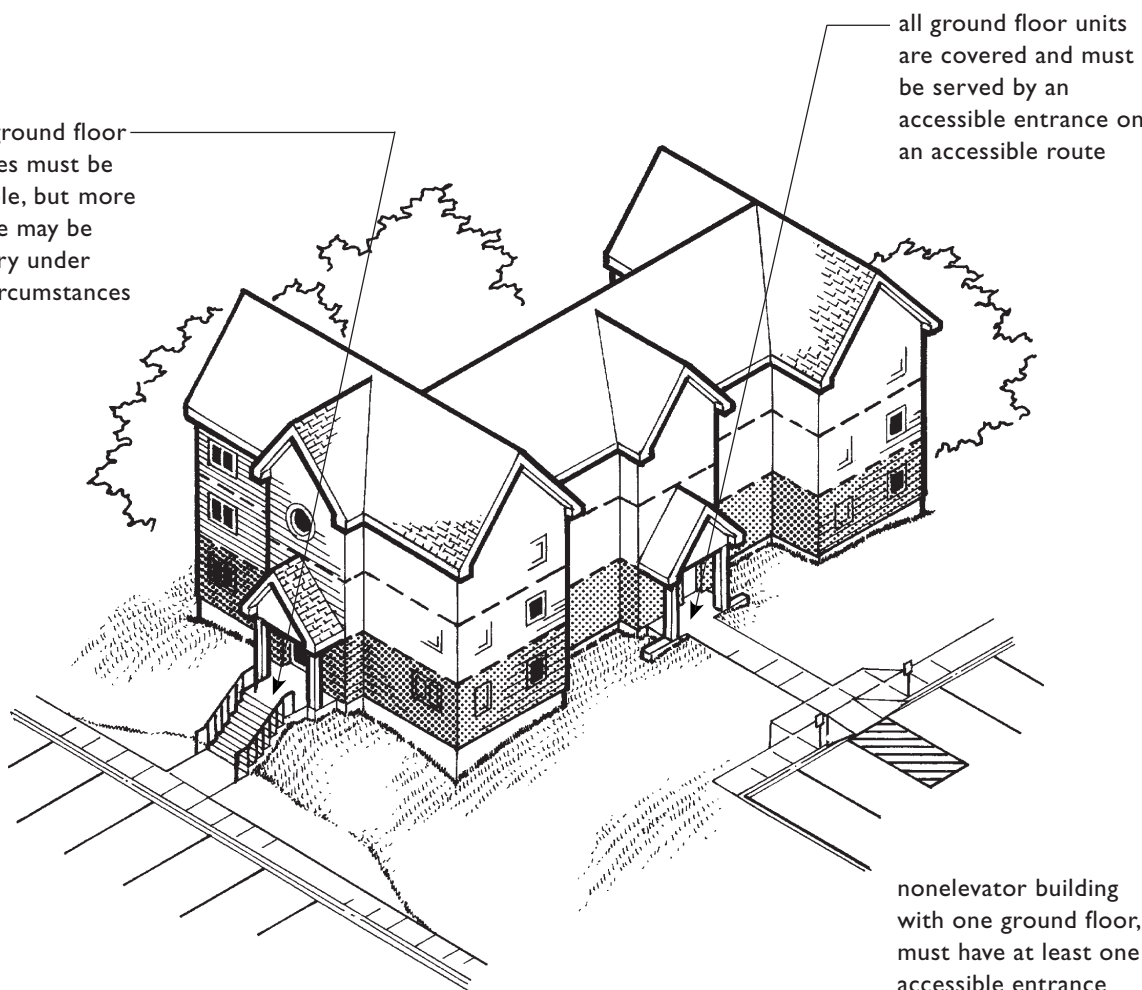
## BUILDINGS WITH COMMON ENTRANCES AND A SINGLE GROUND FLOOR

When a building has a single ground floor and more than one common entrance, at least one entrance must be accessible. This accessible entrance should be the primary entrance and must provide an interior accessible route to all ground floor units in the building. If an interior accessible route does not connect the primary entrance to all ground floor units, additional entrances on accessible routes are necessary to reach the additional ground floor units.

 = covered units

not all ground floor entrances must be accessible, but more than one may be necessary under some circumstances

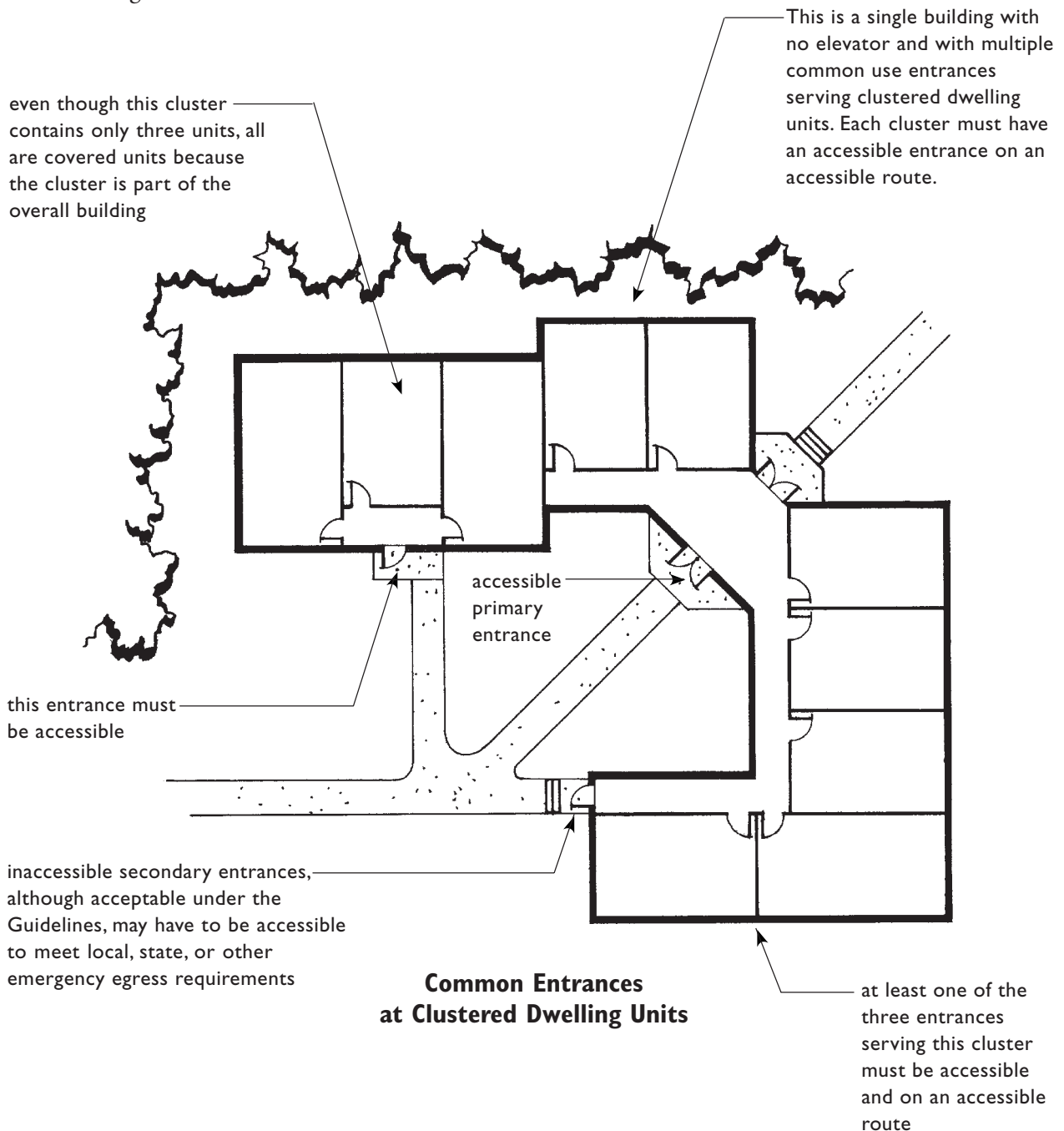
all ground floor units are covered and must be served by an accessible entrance on an accessible route



**Common Entrances in Buildings with a Single Ground Floor**

## BUILDINGS WITH COMMON ENTRANCES AND CLUSTERED DWELLING UNITS

Where dwelling units are clustered in a building, each cluster which has its own entrance or entrances shall have at least one accessible entrance providing access to all ground floor units in the cluster.



## BUILDINGS WITH SPLIT-LEVEL GROUND FLOORS

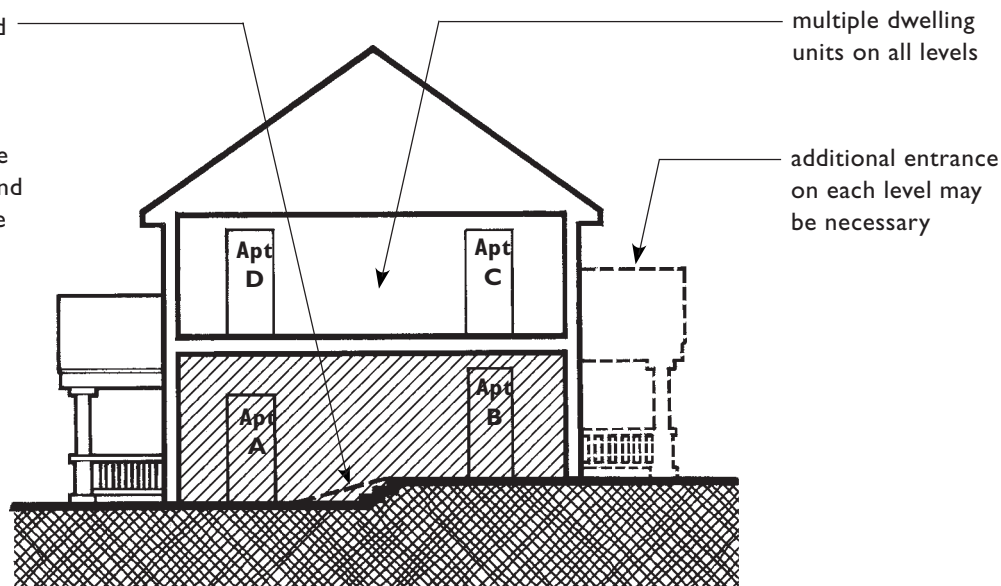
Split-level floors of less than a full story in height are not separate floor levels and are considered to be one ground floor. Covered ground floor units on each level must have entry doors on an accessible route connecting to at least one accessible common use building entrance and at least one of each type of common use facility or feature, such as mail rooms, laundries, vending areas, etc. Since steps and stairs cannot be part of an accessible route, changes in level on covered floors must be accomplished by means of ramps, lifts, or elevators.

If an accessible route, in lieu of or in addition to steps or stairs, is provided between levels, the route must not be remote, hidden,

circuitous, or require people with disabilities to travel excessively long distances to arrive at the same point as others. Finally, the accessible route between levels must be readily available to all residents and visitors and not be locked or require keys, attendants, or special services or permits for use.

If an accessible route is not provided between covered floor levels, each level must have its own accessible common use entrance on an accessible route; any common use facilities or features provided on one level must also be available on an accessible route on each other level.

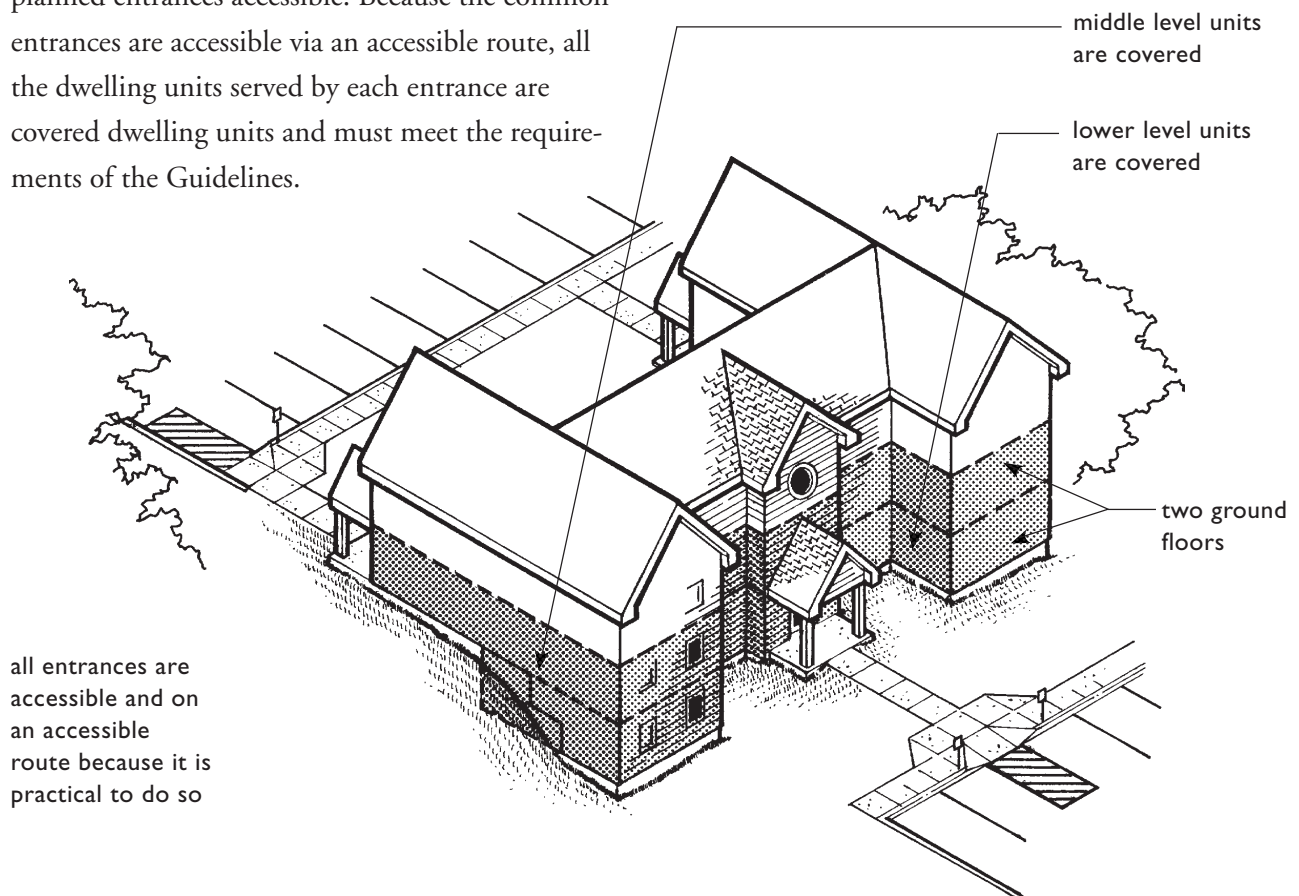
steps must be replaced  
or accompanied by an  
accessible route  
– OR –  
additional common use  
accessible entrances and  
other facilities must be  
provided on each level



**Split-Level Ground Floor Regarded  
as Single Ground Floor**

## **BUILDINGS WITH COMMON ENTRANCES AND MORE THAN ONE GROUND FLOOR**

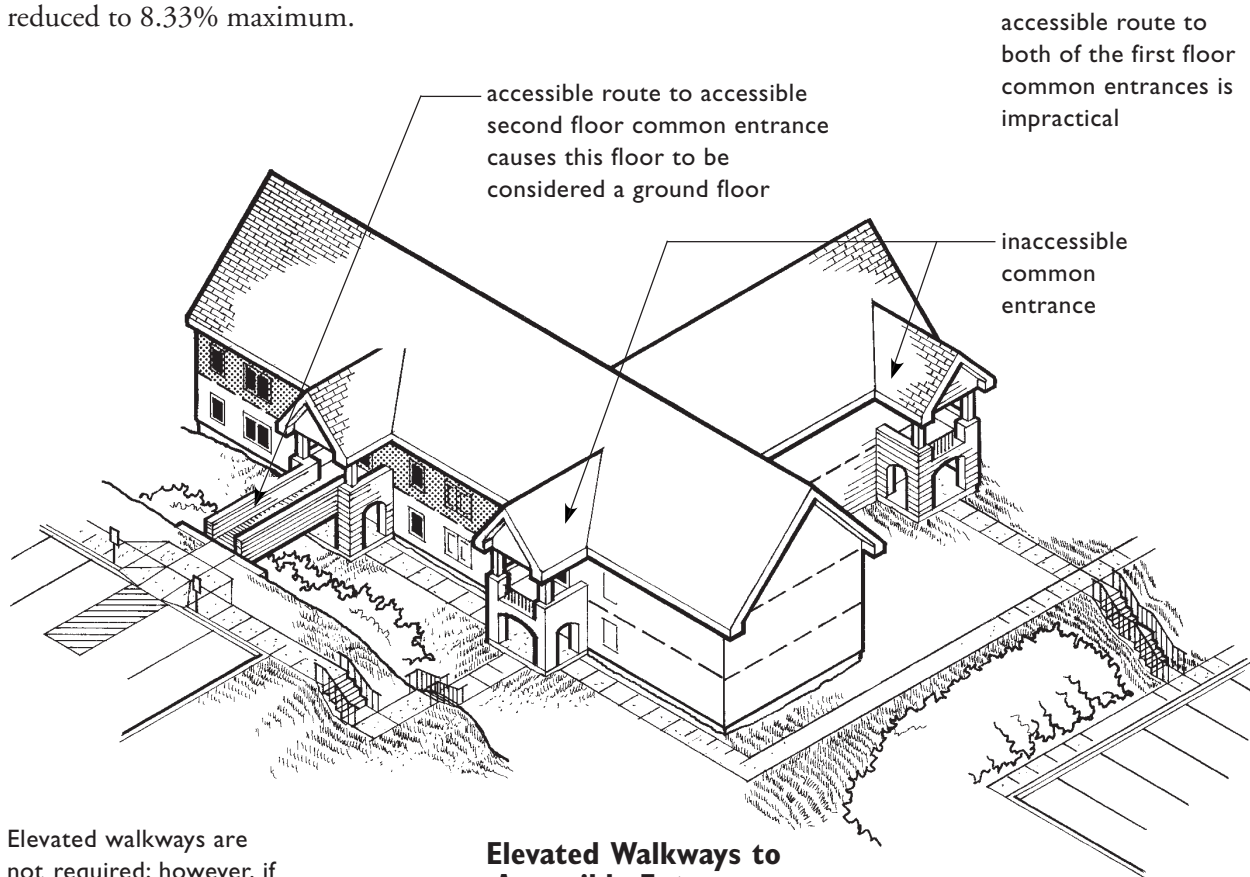
In building designs that are planned to have more than one ground floor, an entrance on each ground floor is required to be accessible unless site conditions make it impractical to provide an accessible route to each entrance. See page 1.38 for site impracticality. In this illustrated example, the planned location of parking and sidewalks (that would serve as the pedestrian and vehicular arrival points) is close to the planned entrances, with only minor changes in level between the arrival points and the floor level of the building at the planned entrances, therefore, it is practical to make the planned entrances accessible. Because the common entrances are accessible via an accessible route, all the dwelling units served by each entrance are covered dwelling units and must meet the requirements of the Guidelines.



**Common Entrances at Buildings  
with More Than One Ground Floor**

## **BUILDING FLOORS HAVING COMMON ENTRANCES SERVED BY ELEVATED WALKWAYS**

When a developer plans an elevated walkway from a pedestrian or vehicular arrival point to the building entrance and the walkway has a slope of 10% or less, that floor shall be considered a ground floor. The dwelling units on that floor are covered and the site is not considered impractical. Since the walkway meets the 10% slope criterion, it is practical to provide an accessible route to the entrance, and the slope of the walkway must be reduced to 8.33% maximum.



Elevated walkways are not required; however, if one is planned and its slope is no greater than 10%, then the slope must be reduced to 8.33% maximum and the dwelling units on that floor shall be accessible.

**Elevated Walkways to Accessible Entrances**

## SITE IMPRACTICALITY

### INTRODUCTION

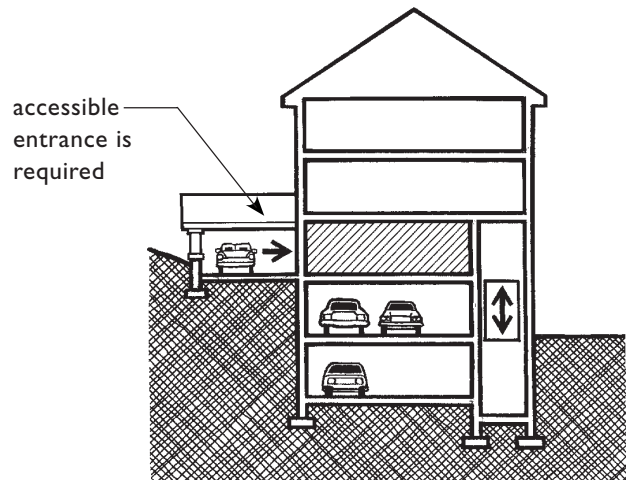
HUD's regulations implementing the Fair Housing Act state:

Covered multifamily dwellings for first occupancy after March 13, 1991 shall be designed and constructed to have at least one building entrance on an accessible route unless it is impractical to do because of the terrain or unusual characteristics of the site. [24 CFR 100.205(a)].

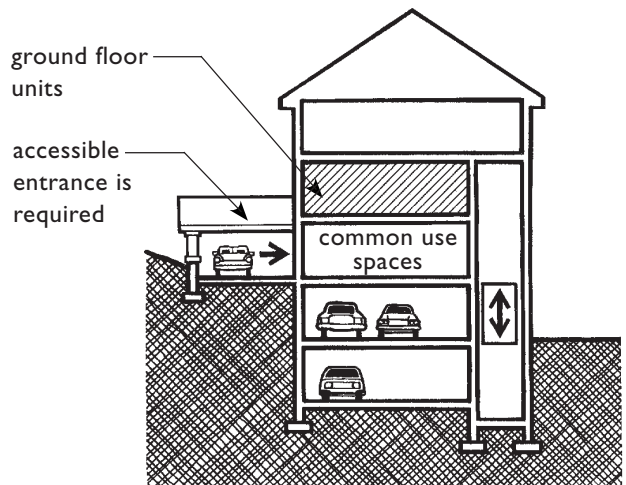
The Fair Housing Act itself does not contain an impracticality exception; however, the preamble to HUD's regulations explains as follows: "Congress did not intend to impose an absolute standard that all covered multifamily dwelling units be made accessible without regard to the impracticality of doing so. Even though the statute itself does not contain an impracticality standard the legislative history makes it clear that Congress 'was sensitive to the possibility that certain natural terrain may pose unique building problems'." Thus, the regulations and the Guidelines recognize that certain site conditions may make it impractical to make all ground floor units accessible in buildings that do not have an elevator due to the difficulty of providing an accessible route to the building entrance or to individual dwelling unit entrances. The Guidelines provide tests for determining site impracticality, which are discussed beginning on page 1.40.

Elevators from garages or grade levels to ground floors need not serve other floors and only the ground floor dwelling units must meet the design requirements of the Guidelines.

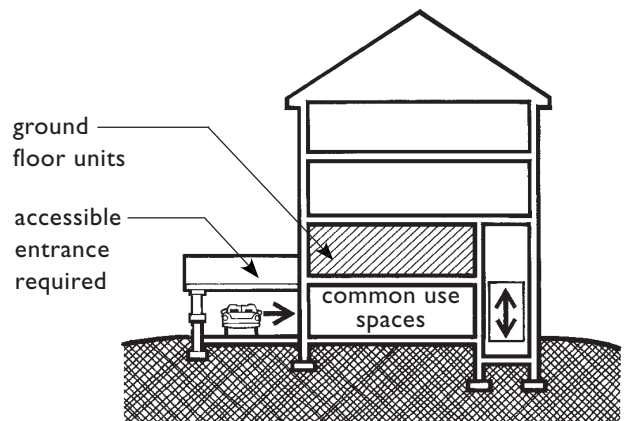
**Buildings With Elevators, Including Those Having Elevators Only for Access to Covered Ground Floor Units, Cannot Claim Site Impracticality**



**Elevator From Garage to Covered Ground Floor Units**

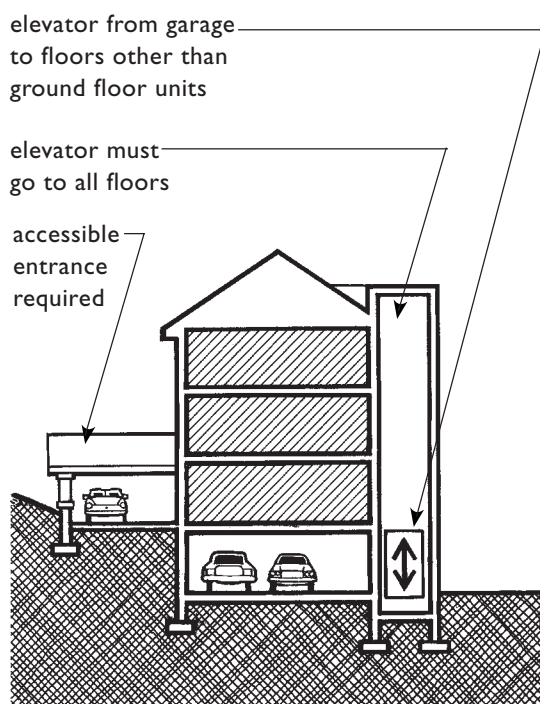


**Elevator From Garage Levels to Ground Floor Units Above Common Use Grade Level Floor**

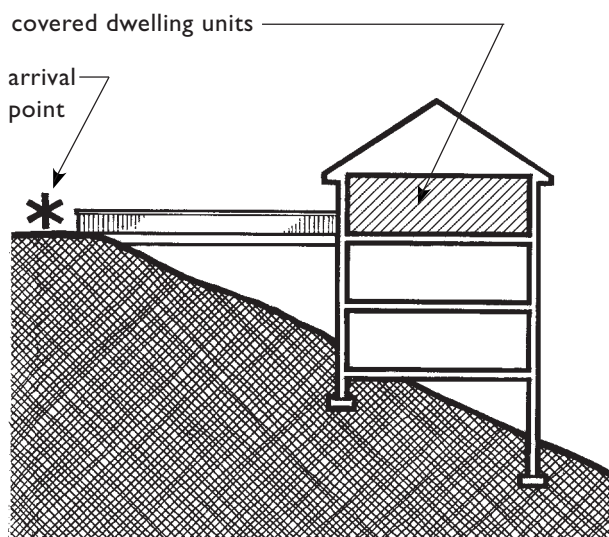


**Elevator From Grade Level Common Use Spaces to Covered Ground Floor Units Above**

If an elevator provides access to any floors other than a ground floor, then it must go to all floors in the building and all units in the building must meet the design requirements of the Guidelines.



**Buildings with One or More Elevators Cannot Claim Site Impracticability**



**Buildings Served by a Planned Elevated Walkway Cannot Claim Site Impracticability**

## **BUILDING TYPES WHERE SITE IMPRACTICALITY IS NOT ALLOWED**

The Guidelines address the regulatory provision for site impracticability discussed above in Requirement 1, Accessible Building Entrance on an Accessible Route. The Guidelines **do not allow site impracticability for certain buildings**. These buildings are:

1. Buildings with one or more elevators – These buildings are covered and must have at least one entrance on an accessible route regardless of terrain or other characteristics of the site.
2. Buildings where an elevator is provided solely as a means of access to units on a ground floor – These buildings are covered and all ground floor units must be accessible. However, this type of building is not treated as an elevator building where all of the units in the building are covered. For a full explanation of buildings with elevators, see pages 1.20 through 1.25.
3. Buildings that have an elevated walkway – Site impracticability is not allowed for buildings where an elevated walkway is planned between a building entrance and a vehicular or pedestrian arrival point and the planned walkway has a slope no greater than 10%. The 10% criterion only determines whether making the entrance is practical. Once this criterion is met, the slope would have to be reduced to a maximum of 8.33 %.

These building types for which site impracticability is not permitted are illustrated on this page and 1.38.

Site impracticability is not allowed where the entrance to the building is provided by an elevated walkway between the building entrance and an arrival point with a planned slope no greater than 10%. By meeting the 10% slope criterion, it is considered practical to provide an accessible route, and the slope must be reduced to 8.33% maximum.

## **SITE IMPRACTICALITY TESTS FOR SITES WITH DIFFICULT TERRAIN**

The Guidelines provide **two tests to determine site impracticality** based upon difficult terrain conditions, the **Individual Building Test** and the **Site Analysis Test**.

Since buildings with one or more elevators and those served by a planned elevated walkway cannot claim site impracticality, the site impracticality tests apply only to other types of buildings on sites having extreme terrain or unusual characteristics. The tests will help determine the actual number of units that must meet the Guidelines on such sites.

The tests differ and their application will be affected by the number of buildings on the site, the number of planned entrances, the slope of the land, and the distance between key points on the planned site. Unusual site characteristics, including such conditions as federally designated flood plains or coastal high hazard areas where it is required to raise the floor level of buildings above a base flood elevation, also have an impact on the number of covered dwelling units. Each of the tests follow the Guidelines and conclude with a minimum required number of accessible units.

The **Individual Building Test** accepts as inaccessible, because of site impracticality due to terrain, all ground floor units in which the elevation difference between the undisturbed site grade and the proposed finished site grade from arrival points and the planned building entrance is over 10% when measured in a straight line. If either the undisturbed slope or the proposed finished slope, measured in a straight line, is 10% or less, then site impracticality due to terrain does not exist and the

developer must provide an accessible route to the particular entrance being measured.

The **Site Analysis Test** measures the total buildable area of undisturbed or natural grade having an existing slope before grading less than 10% (**Step A**). The area of less than 10% slope is expressed as a percentage of the total site area less any restricted use areas such as wetlands or flood plains. The percentage establishes the minimum percentage of ground floor units to be made accessible (**Step B**) subject to the additional requirement of **Step C**. **Step C** requires that, in addition to the percentage established in **Step B**, all ground floor units in a building or ground floor units served by a particular entrance shall be made accessible if the entrance to the units is on an accessible route, defined as a walkway with a slope between the planned entrance and a pedestrian or vehicular arrival point that is no greater than 8.33%.

### **Which Tests Apply to Which Sites**

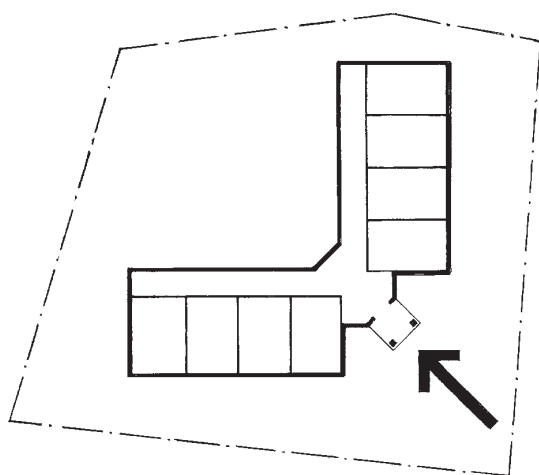
The tests relate to different buildings and site conditions. It is important to remember before discussing the test applications that they are not applicable to buildings having one or more elevators (elevator buildings) because they already are covered and all units in them must meet the requirements of the Guidelines, and they must have at least one entrance on an accessible route regardless of terrain or other characteristics of the site. None of the buildings described in the following explanation of test applications are elevator buildings; nor are they served by an elevated walkway between a building entrance and an arrival point.

### Sites Where Only the Individual Building Test May be Used

For sites with difficult terrain which have a single building with only one common entrance on the site, the individual building test **must** be used. If the results of this test determine that it is impractical to make that entrance accessible, then the building is not required to be accessible and none of the ground floor units are covered. This is the only circumstance under which an entire site may not be covered.

### Sites Where Either Test May be Used

Either test may be used for building sites having multiple buildings or a single building with more than one common entrance. When the Individual Building Test is applied to such sites it must be calculated for each building and each building entrance separately.



**Single Building on a Site with One Common Entrance**

### Example of Potentially Impractical Site Based on Terrain and Application of Individual Building Test

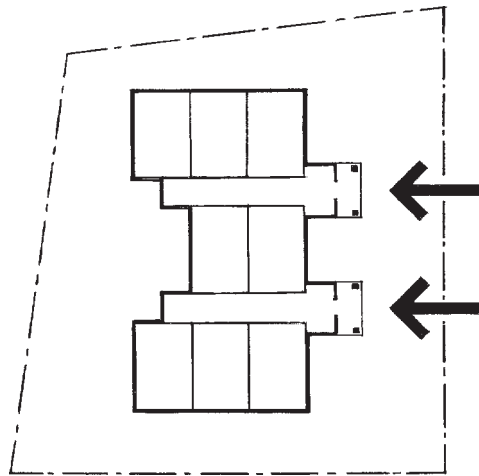
### The 20% Rule

For those sites where **either** the Individual Building Test or the Site Analysis Test may be used, the Guidelines set a **minimum** percentage of ground floor units, which serves as a starting point even before the tests are applied. This minimum is 20%. Thus, for those sites where either test may be used, there never will be a situation where less than 20% of the units are required to comply with the Guidelines; in most cases the tests will result in a much larger percentage of units required to be accessible. Keep in mind that this 20% minimum cannot be used as a maximum. The results of the test, depending on which test is used, will determine the maximum number of units required to be accessible.

Note: The following examples apply only to buildings that do not have one or more elevators (elevator buildings). Buildings having one or more elevators must be accessible regardless of site conditions.

- one building
- 4 or more units
- 1 entrance
- **must** use the Individual Building Test

A site with a single building with one common entrance may not be required to be accessible if the site is impractical and application of the Individual Building Test determines impracticality at this entrance.

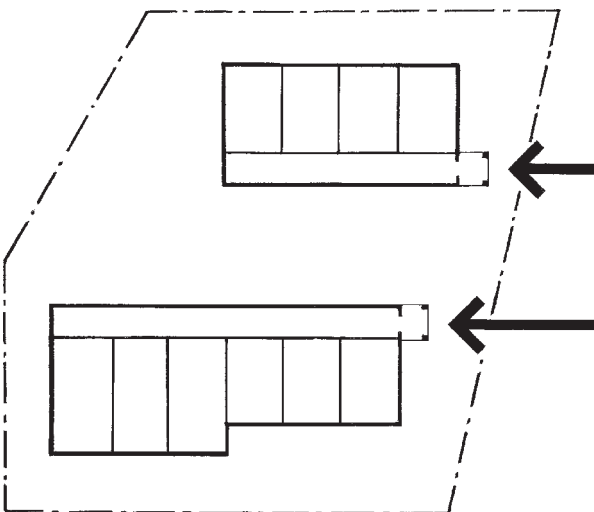


**Single Building with Multiple Entrances on a Site**

Note: The following examples apply only to buildings that do not have one or more elevators (elevator buildings). Buildings having one or more elevators must be accessible regardless of site conditions.

- single building on a site
- 4 or more units
- 2 or more entrances
- **may** use either the Individual Building Test or the Site Analysis Test

A minimum 20% of ground floor units must comply with the requirements of the Guidelines, plus an additional number determined by application of one of the tests. In addition, if any entrance is made accessible to meet either the 20% minimum or the percentage resulting from the test: **all units served by that entrance must comply.**



**Multiple Buildings on a Site**

- multiple buildings on a site
- 4 or more units in each building
- 1 or more entrances
- **may** use either the Individual Building Test or the Site Analysis Test

A minimum 20% of ground floor units must comply with the requirements of the Guidelines, plus an additional number determined by application of one of the tests. In addition, if any entrance is made accessible to meet either the 20% minimum or the percentage resulting from the test: **all units served by that entrance must comply.**

### **Examples of Potentially Impractical Sites Based on Terrain and Application of Site Impracticality Tests**

## INDIVIDUAL BUILDING TEST

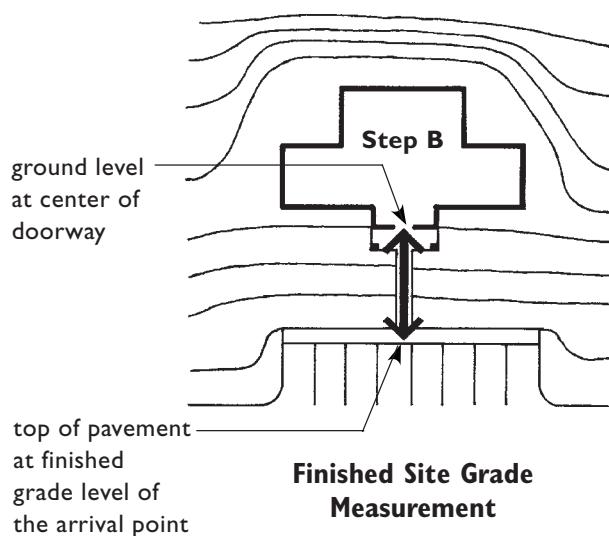
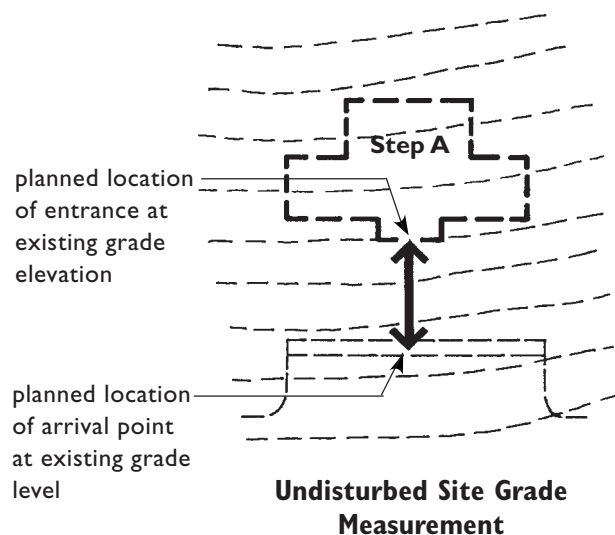
The Individual Building Test **must** be used to analyze a site with a single building with one common entrance and also may be used for all other sites. The Individual Building Test, unlike the Site Analysis Test, does not have to be certified by a professional licensed engineer, landscape architect, or surveyor; but it should be calculated on a topographic map with two-foot (or less) contour intervals.

For it to be considered impractical to provide an accessible route to any building or individual dwelling unit entrance, the slope between the pedestrian arrival points and the planned

entrances must meet both of the following two conditions (quoted directly from the Guidelines):

**STEP A.** the slopes of the undisturbed site measured between the planned entrance and all vehicular or pedestrian arrival points within 50 feet of the planned entrance exceed 10%; and

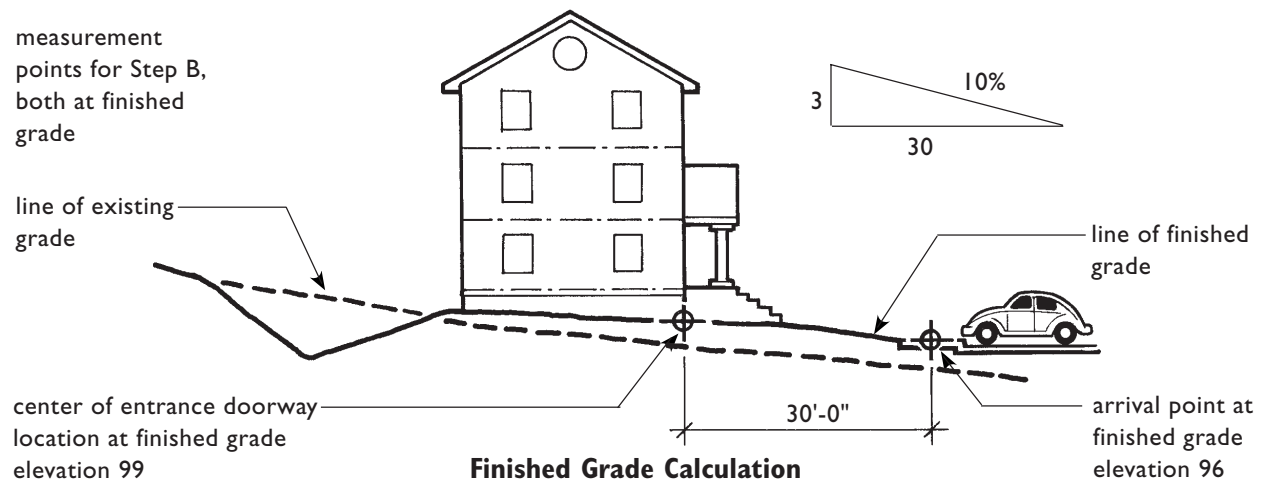
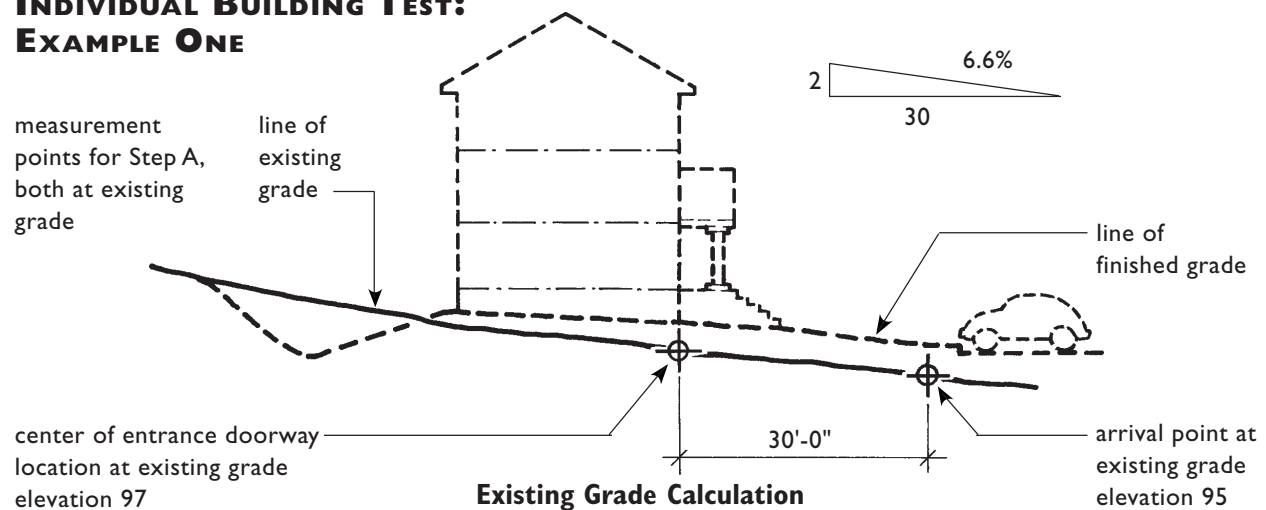
**STEP B.** the slopes of the planned finish grade measured between the entrance and all vehicular or pedestrian arrival points within 50 feet of the planned entrance also exceed 10%.



If the slope of both the undisturbed site and the planned finished grade between the building entrance and pedestrian arrival points does not exceed the 10% slope criterion, then it is considered practical to provide an accessible route with a maximum slope of 8.33% to the building or dwelling unit entrance. The entrance, thus, must be accessible and the unit(s), plus the public and

common use spaces in the building served by the entrance, must comply with the design requirements of the Guidelines. The 10% slope criterion determines whether it is practical to provide an accessible route from a pedestrian arrival point to the building or dwelling unit entrance. It is not meant to imply that 10% is the acceptable slope for an accessible route.

### INDIVIDUAL BUILDING TEST: EXAMPLE ONE

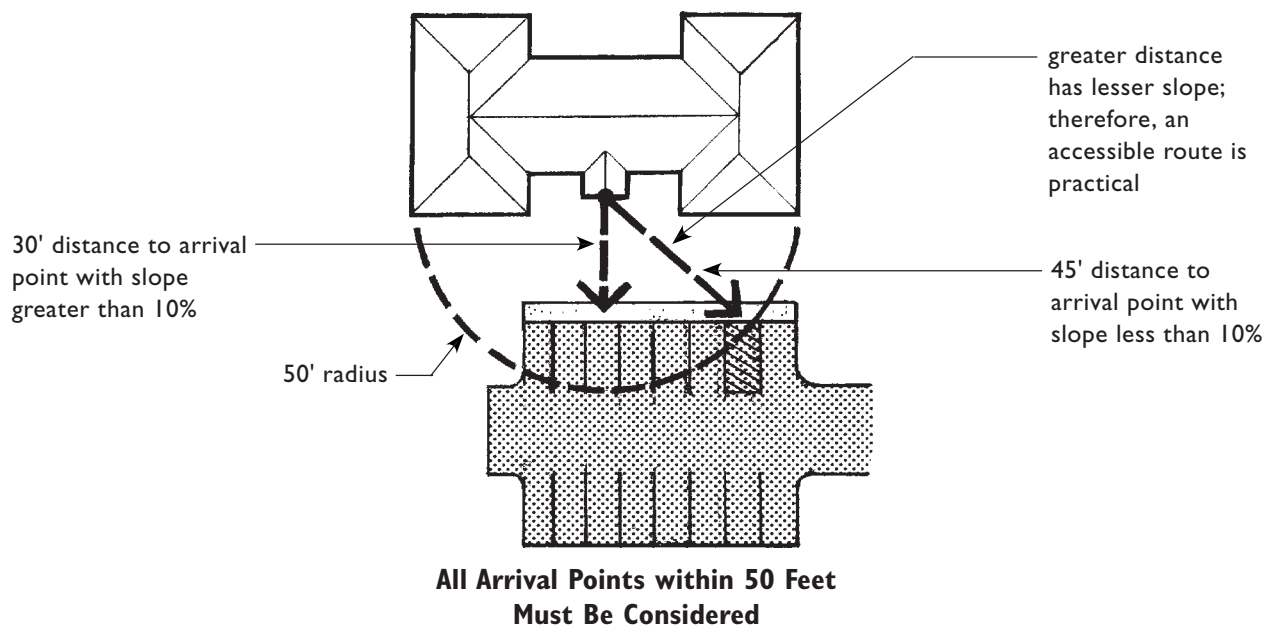


### Individual Building Test: Example One

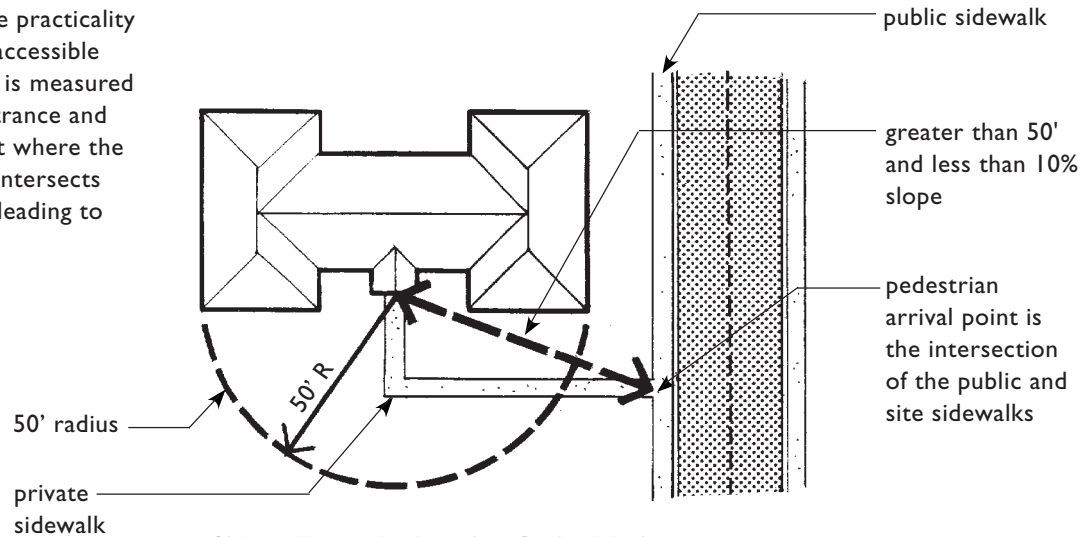
both calculations do not exceed 10%; therefore, the developer must provide an accessible route to the entrance and all units on the ground floor served by the entrance are covered

Vehicular or pedestrian arrival points include public or resident parking areas, public transportation stops, passenger loading zones, and public streets or sidewalks. In applying the test, all arrival points within the radius of 50 feet must be reviewed and not just a direct line to the closest arrival point. As shown in the diagram below, a 30-foot line to the closest arrival point has a slope of more than 10%, while a 45-foot line to a farther point has a slope of less than 10%. An accessible building entrance on an accessible route is, therefore, practical and the entrance must be accessible.

If there are no vehicular or pedestrian arrival points within 50 feet, the slope must be calculated to the closest arrival point beyond 50 feet. For sidewalks, the closest point to the planned entrance is taken at the point where a public sidewalk entering the site intersects with a sidewalk leading to the entrance.



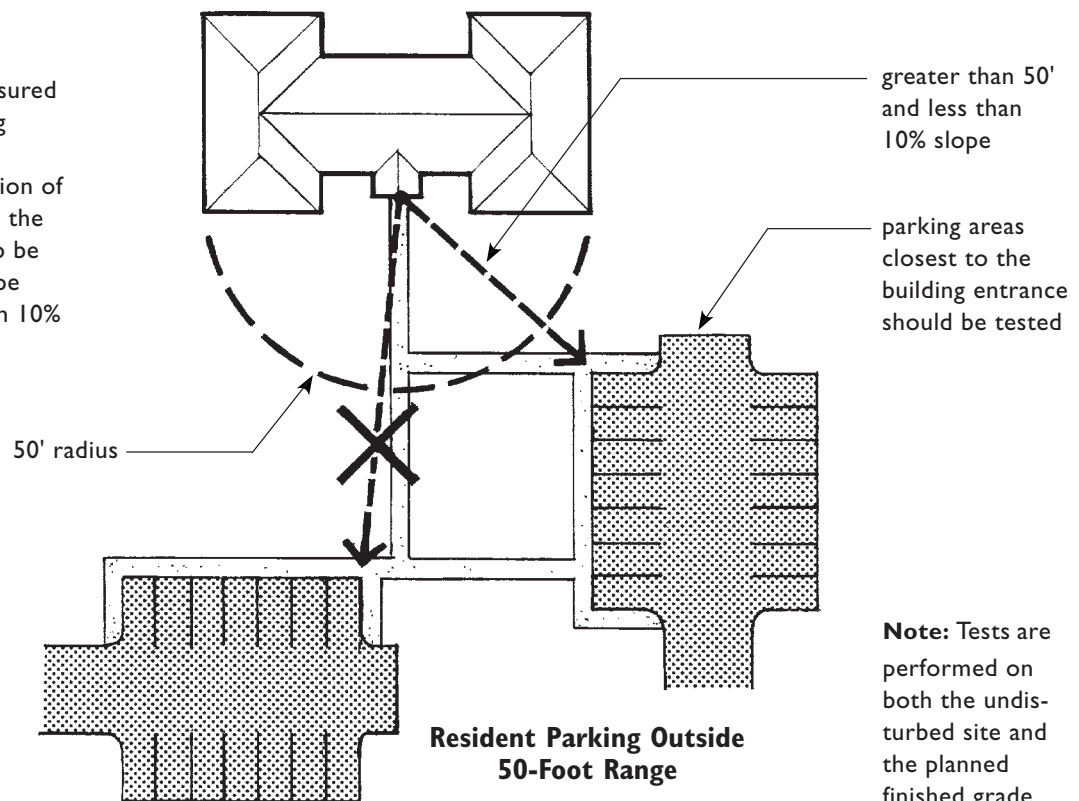
to determine the practicality of providing an accessible route, the slope is measured between the entrance and the closest point where the public sidewalk intersects with a sidewalk leading to the entrance



**Sidewalks as Pedestrian Arrival Points**  
(Closest Arrival Point Is Outside 50-Foot Range)

In the case of resident parking areas, the closest point to the planned entrance will be measured from the entry point to the parking areas that are located closest to the planned entrance.

the slope is measured from the building entrance to the closest intersection of the sidewalk and the parking area – to be practical the slope must be less than 10%



**Note:** Tests are performed on both the undisturbed site and the planned finished grade.

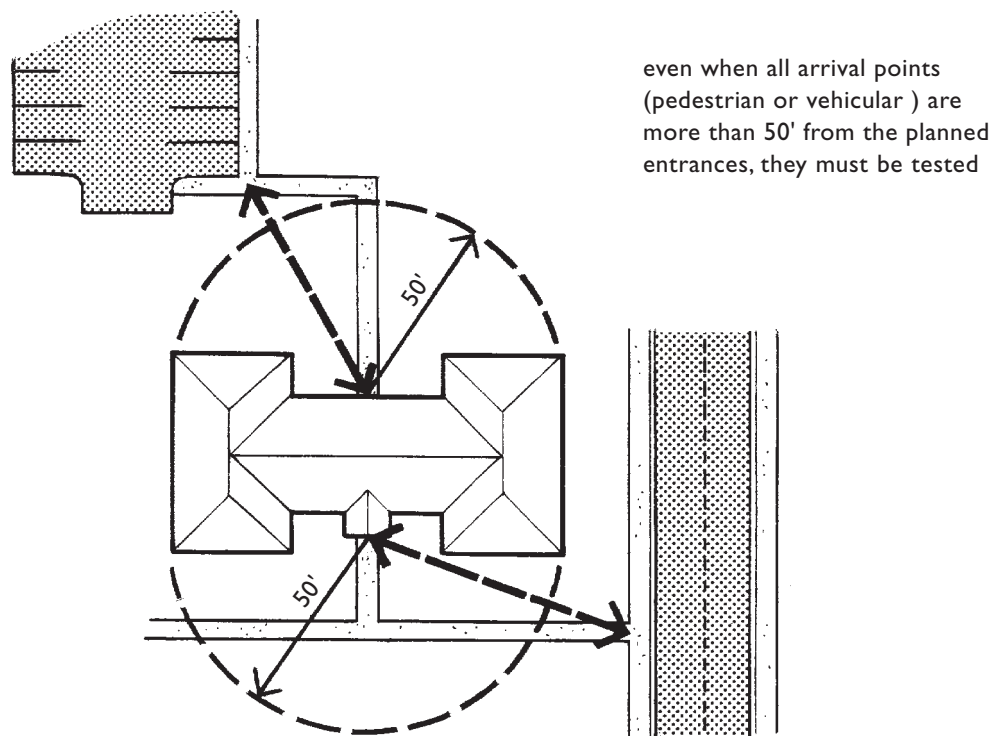
In some buildings the Individual Building Test may need to be applied to each entrance. The following pages contain illustrations explaining the application of this test at different site conditions.

### INDIVIDUAL BUILDING TEST:

#### EXAMPLE TWO

For buildings having **more than one planned common entrance** on a ground floor, the Individual Building Test must be conducted for each

entrance. Even if both entrances prove to be impractical, 20% of the ground floor units still must meet the requirements of the Guidelines; and the developer must change the entrance in whatever way necessary to provide an accessible route to these units. Once the accessible route and entrance is provided, all ground floor units served by the accessible entrance must comply. However, only one entrance is required to be accessible and on an accessible route.



**Individual Building Test:  
Example Two**  
**Buildings with More than One Planned Common  
Entrance on a Ground Floor**

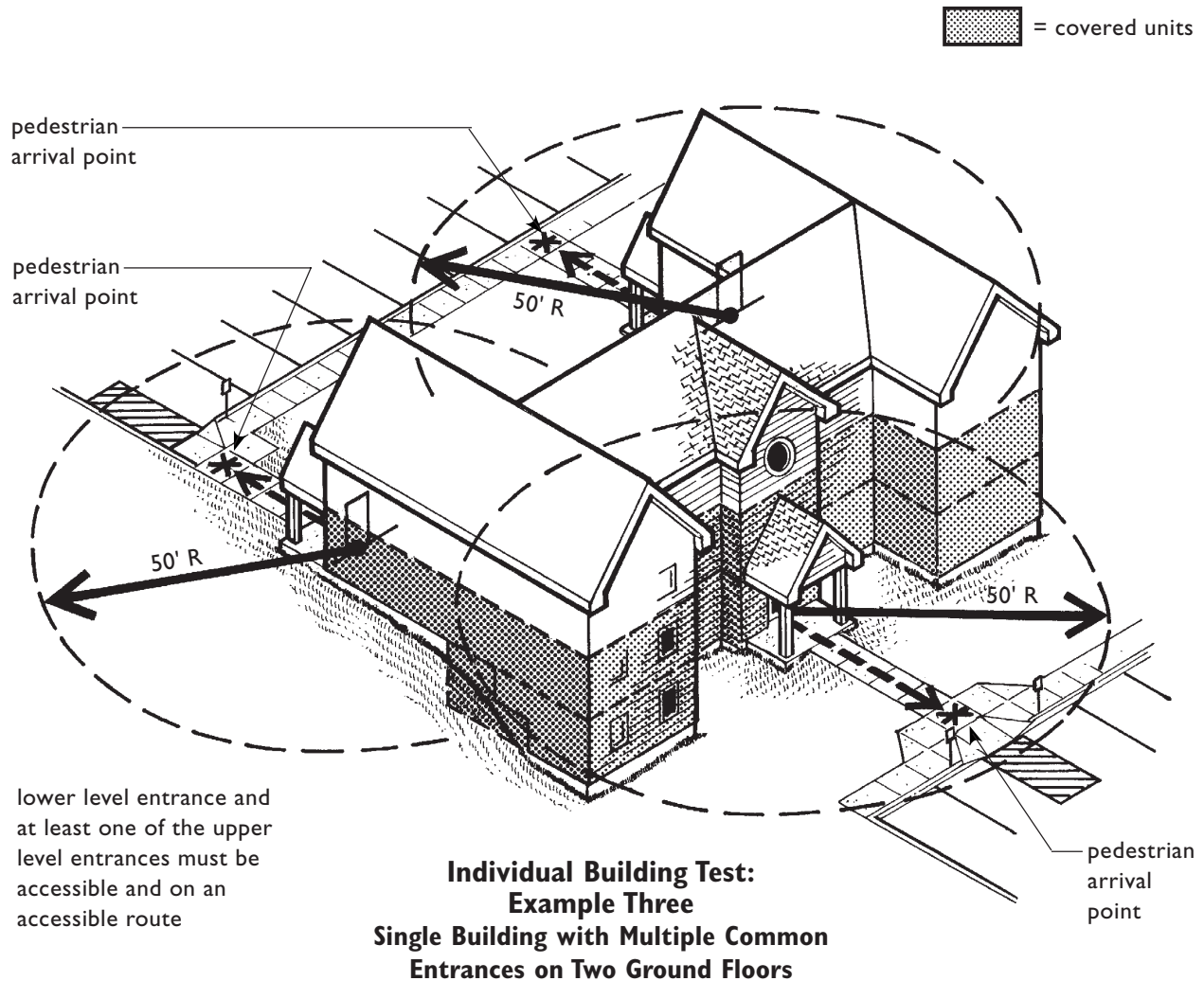
## INDIVIDUAL BUILDING TEST:

### EXAMPLE THREE

For buildings having **more than one planned common entrance on more than one ground floor** the Individual Building Test is applied to each entrance.

The site arrival points within 50 feet of each entrance for both the existing and finished grade do not exceed 10%; therefore, all entrances

are practical. Since all entrances are practical, units on both floors are covered and must comply with the requirements of the Guidelines. The entrance on the lower floor level and at least one of the entrances on the upper floor level must be on an accessible route unless the two entrances on the upper level serve different sets of clustered units, in which case both upper level entrances must be on an accessible route.



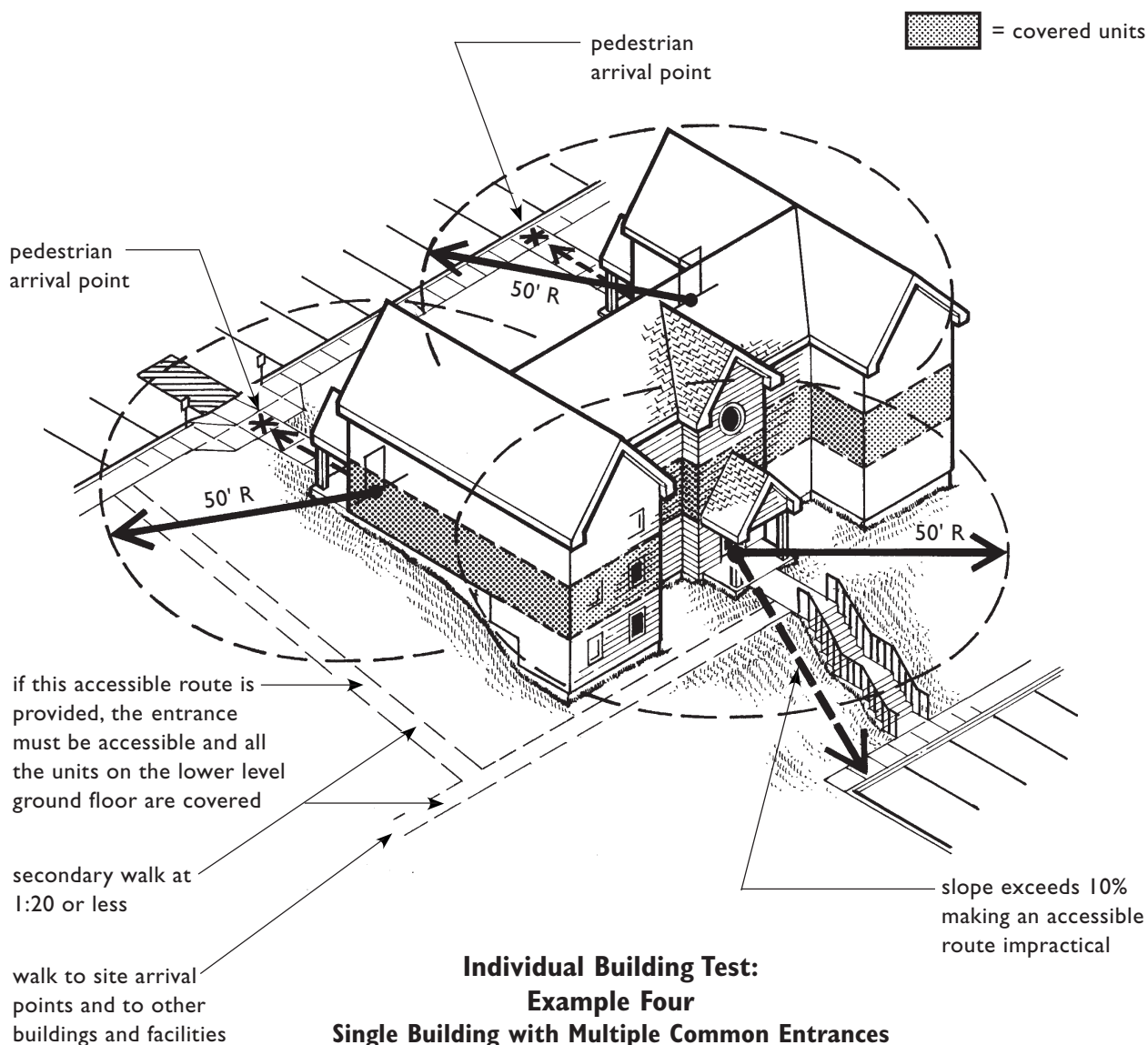
## INDIVIDUAL BUILDING TEST:

### EXAMPLE FOUR

There is a site arrival point within 50 feet of each planned entrance. The slopes from the existing and finished grade for the two upper level entrances do not exceed 10%, but the slopes for the lower level entrance do.

It is impractical to provide an accessible route from parking to the entrance on the lower ground floor. However, a secondary and

nonrequired walk system is planned (dotted lines). It would connect the lower level entrance to the upper level arrival points and to other on-site buildings, amenities, and arrival points. The walk would not exceed a 1:20 slope and would therefore be an accessible route. If the walk is installed, the lower level entrance would be on an accessible route and the units on the lower level floor also would be covered.



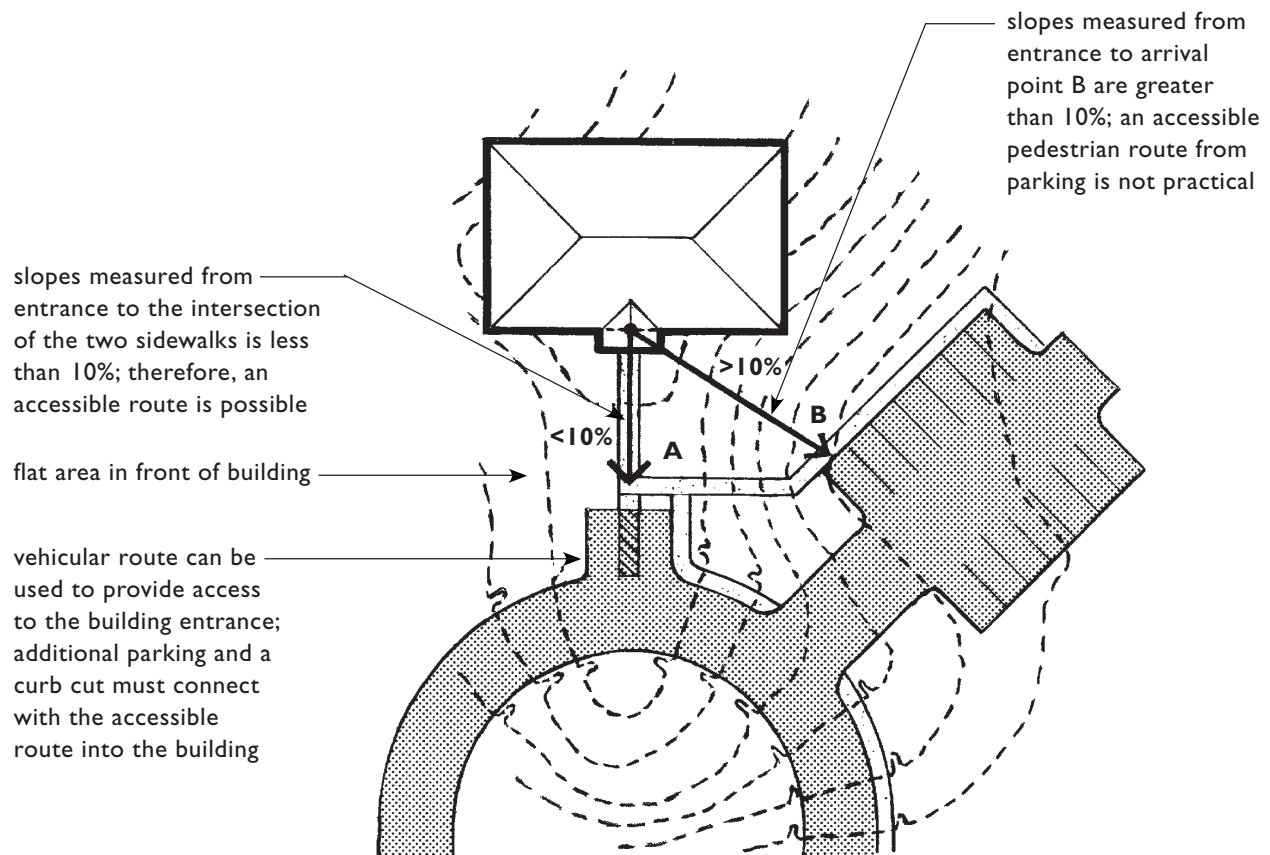
**Individual Building Test:  
Example Four  
Single Building with Multiple Common Entrances  
Lower Ground Floor Units May Be Covered**

**INDIVIDUAL BUILDING TEST:  
EXAMPLE FIVE  
VEHICULAR ROUTE PROVIDES ACCESS  
TO BUILDING ENTRANCES**

There is a single nonelevator building on a site having one common entrance, so the Individual Building Test is used to evaluate the practicality of providing an accessible route from the arrival points to the planned entrance. The closest arrival point is the sidewalk beside the driveway that curves up a slope to a flat area in front of the entrance (point A). The slopes from the entrance to arrival point A are less than 10%, but no parking is provided. The slopes between the entrance and all

other vehicular and pedestrian arrival (point B) are greater than 10%, making it impractical to provide an accessible pedestrian route from the parking lot to the building entrance.

This is still a covered building since an accessible route is possible from the entrance to the sidewalk in front of the building. Because it is impractical to install an accessible pedestrian route from the parking area, an acceptable alternative is to provide access via a vehicular route. However, necessary site provisions, such as parking spaces and curb ramps, must be provided on an accessible route to 2% of the covered dwelling units.



**Individual Building Test:  
Example Five  
Vehicular Route May Be Used to Provide Access to  
Buildings Containing Dwelling Units**

## **SITE ANALYSIS TEST**

This test may be used to analyze the site for a multifamily housing development containing multiple buildings without elevators, or a single nonelevator building with multiple entrances. The methodology for this test is significantly different from the Individual Building Test. It requires an analysis of the site to determine the number of required units which must be on an accessible route and which must meet the design requirements of the Guidelines. After this calculation is completed, the site is laid out and the minimum number of covered units must be provided. A third step which analyzes the placement of required units, accessible routes, and accessible entrances is then performed. This step is used to identify any additional units that can and therefore must be made to comply. Where the site contains multiple buildings, all the covered units should not be clustered in one building, but, as much as the site allows, should be dispersed throughout all the buildings. To perform the Site Analysis Test the following steps must be taken:

### **STEP A**

**Calculate the percentage of total buildable area of the undisturbed site with a natural grade less than 10% slope.**

**1. Obtain a Survey Map:** Obtain a topographic survey map of the undisturbed site with 2-foot contour intervals. The map must show precise boundaries of the site as well as areas where building is not allowed, such as floodplains, wetlands, setbacks, easements, or other restricted use areas.

**2. Measure the Total Buildable Area:** Measure the total area on which building is allowed, i.e., the area of the lot or site where a building can be located in compliance with applicable codes and zoning regulations. The “Total Buildable Area” is the total area of the site minus any restricted use areas.

**3. Complete a Slope Analysis:** Do a slope analysis of the total buildable area and mark on the topographic survey all those areas which have a slope of 10% or less. Calculate the combined area of site with slopes less than 10%. The slope determination shall be made between each successive 2-foot contour interval. **The accuracy of the slope analysis must be certified by a professional licensed engineer, architect, landscape architect, or surveyor.**

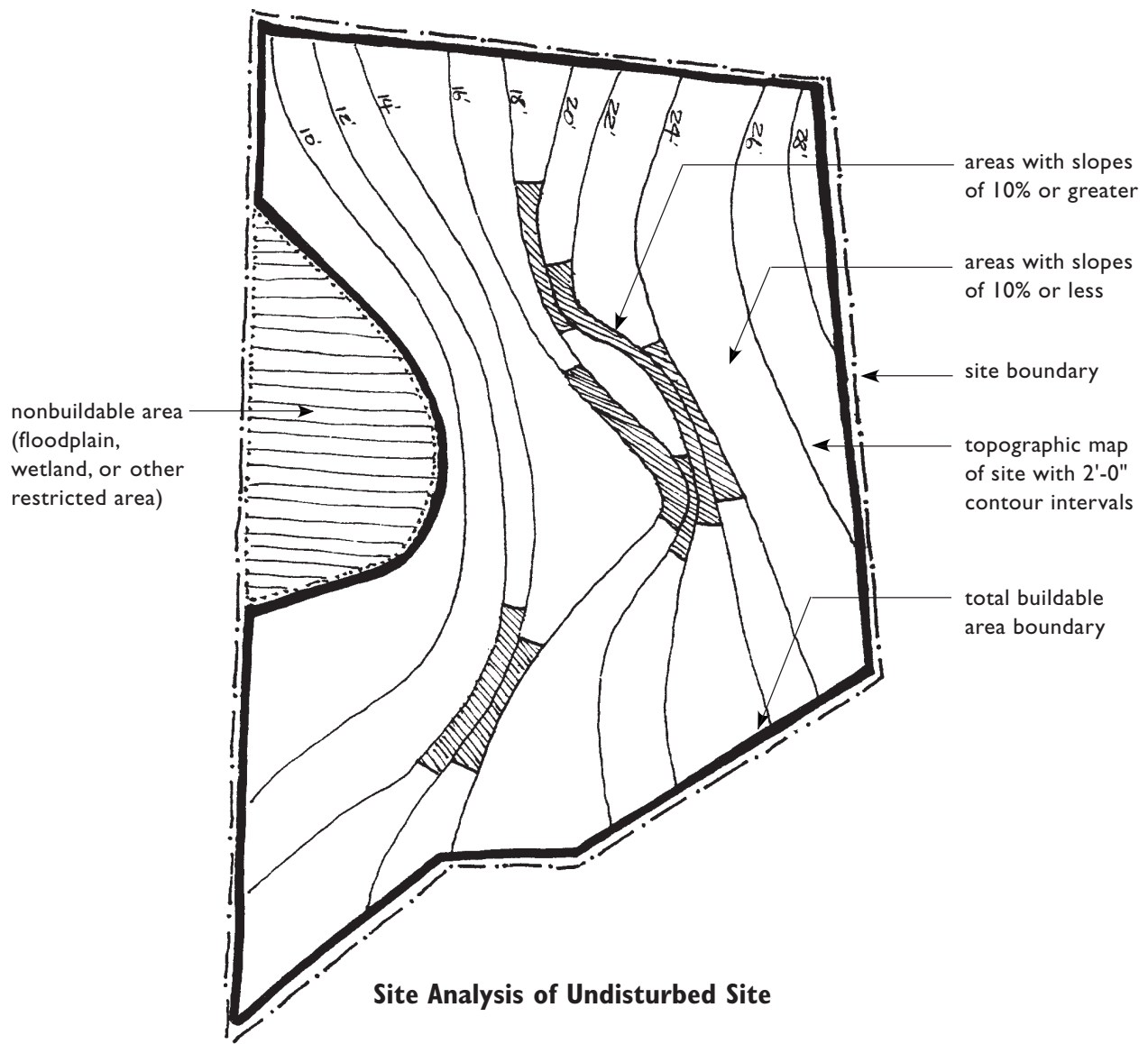
### **STEP B**

**Calculate percentage of accessible units.**

Calculate the percentage of total buildable area of the undisturbed site with a natural grade less than 10%. This percentage is the minimum percentage of ground floor units which must be made accessible. See sample site on page 1.52.

For example, if the total buildable area is 125,000 square feet and the area with slopes of less than 10% is 100,000 square feet, then the minimum percentage of units to be accessible is 80%.

$$\frac{\text{Area with slope } < 10\%}{\text{Total buildable area}} = \frac{100,000}{125,000} = 80\%$$



### STEP C

#### Additional Covered Units

In addition to the number of units required by the preceding analysis, **all ground floor units** must meet the design requirements of the Guidelines if they are served by a planned building entrance which is on an accessible route, i.e., on a walkway having a slope no greater than 8.33% between the planned entrance and a vehicular or pedestrian arrival point. This requires the builder/developer to

review the site plan a second time to determine if additional accessible routes and/or entrances have been created that will increase the number of covered accessible units. Whenever accessible routes or entrances have been created to provide access to the minimum required number of units, any additional units that may be served by those entrances also must meet the requirements of the Guidelines.

## APPLYING THE SITE ANALYSIS TEST

### Calculating the Required Number of Covered Units

There are three nonelevator buildings on a site. Two have 16 units, 4 on the lowest ground floor level and 6 on each of the other floors. The third building has 12 units, 6 on each floor. Performing **Step A** of the site analysis test reveals that 75% of the buildable area has a slope of less than 10%. Therefore, 75% of the total number of ground floor units must meet the requirements of the Guidelines and be on an accessible route.

Buildings One and Two have two ground floors, while Building Three has only one ground floor. The total number of ground floor units for the development is 26. Seventy-five percent of  $26 = 20$  (19.5 rounded up) ground floor units that are covered (**Step B**). The covered units should be dispersed on the site among the three buildings.

To provide the required number of units the developer/builder chooses to place the covered units on the only ground floor in Building Three and on the upper ground floor of Buildings One and Two, where accessible entrances on accessible routes can be provided most easily. The number of units on these floors totals 18, which is 2 units **less** than the 20 that are needed to meet **Steps A and B**.

To meet the requirement for 20 accessible units, the developer/builder has the option of providing the 2 additional units on the second ground floor of either Building One or Two. In this example, the builder places the additional 2 required units on the lower ground floor of Building One, and provides the required accessibility by regrading and adding a ramp to the lower level entrance. Additionally, under **Step C**, since the

lower level entrance is now on an accessible route, all the units on that floor become covered units and the entire ground floor must comply. As a result, the total number of covered units is 22.

### Positioning Covered Units on a Building Site

It is permissible under the Site Analysis Test to select in which buildings and on which floors covered units will be placed; however, in a multiple building development, all the covered units should not be located in a single building. Covered units should be dispersed between buildings and, if possible, among all the ground floors. However, if the required number of covered units is less than the total number of units on a floor, all the units on that floor become covered units because the required units are served by an accessible route and entrance.

### Step A

Topographic analysis:

Area < 10% slope = 75%

Ground floor units to comply = 75%

### Step B

Total Ground Floor Units = 26

$\times 75\%$

Covered Units =  $\frac{20}{20}$

### Step C

After distribution of required units, total count of 20 covered ground floor units is raised to 22.

Two more units are added to lower ground floor of Building #1 and an accessible route is provided to meet the required 20. Two remaining units on that floor become covered units because all ground floor units served by an accessible route are covered units.

### Building #3

- 1 ground floor
- 6 ground floor units
- all 6 ground floor units covered

### Building #2

- 2 ground floors
- 10 ground floor units
- 6 ground floor units covered

### Building #1

- 2 ground floors
- 10 ground floor units
- all 10 ground floor units covered

additional  
required covered  
units provided  
on lower ground  
floor

6 units

6 units

4 units

To meet the required number of covered units an additional accessible entrance on an accessible route must be provided to another ground floor, thus making all the units on that floor covered.

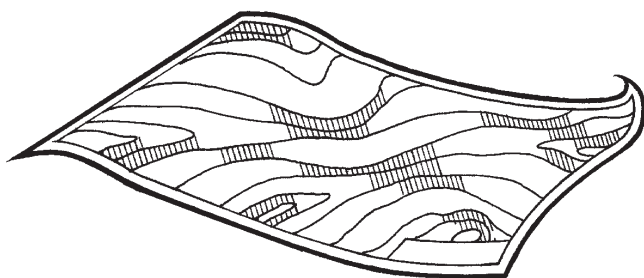
## Site Analysis Test: Example One The Number of Covered Units

### **ACCESSIBLE ROUTES MAY DICTATE ADDITIONAL COVERED UNITS**

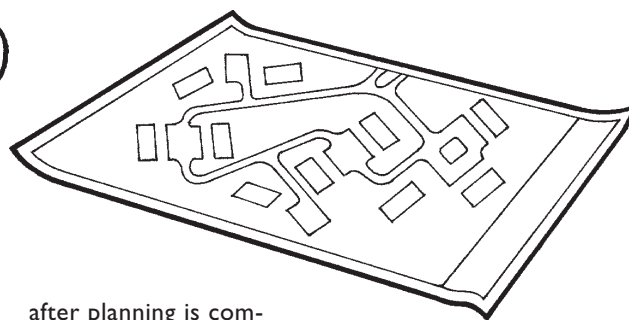
If the Site Analysis Test indicates a particular percentage of required covered units and the project has a larger number, all of which are on accessible routes, the larger number are covered and must meet the design requirements of the Guidelines.

Ten three-story nonelevator buildings are planned for a site, each having eight ground floor units for a total of 80 units. **Steps A and B** of the site analysis test show 60% (or 48) of the ground

floor units must comply. During planning the developer places these 48 required units in six of the ten buildings, selecting the six buildings where providing accessibility is easily achieved. However, after the site planning is completed, application of **Step C** shows that all ten buildings have entrances on an accessible route, i.e., a walkway with a slope between the planned building entrances and a pedestrian or vehicular arrival point that is no greater than 8.33%. Therefore, all ground floor units in each building (or 80 units) must meet the Guidelines.



**Steps A and B** of the site analysis reveals 60% of ground floor units are covered



after planning is completed **Step C** of the test requires all buildings to have entrances on an accessible route; therefore, 100% of ground floor units are covered

### **Site Analysis Test: Example Two Additional Covered Units**

## SITES WITH UNUSUAL CHARACTERISTICS

Certain sites are subject to laws or codes which specify that the lowest floor of a building or the lowest structural member of the lowest floor must be raised to a specified level. Examples of such sites are those located in a federally designated flood-plain or coastal high-hazard area, where buildings must be raised to a level at or above the base flood elevation.

When these circumstances result in **Step One**, a difference in grade elevation exceeding 30 inches

– and –

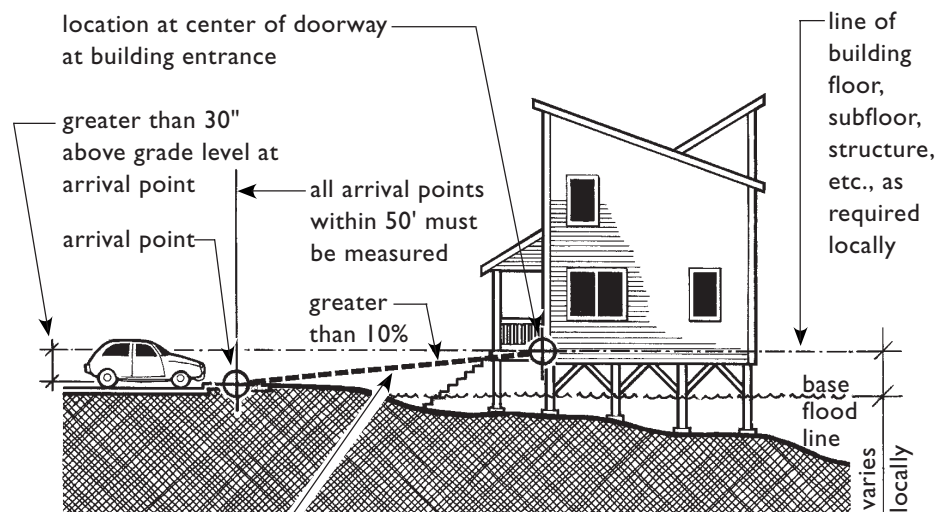
**Step Two**, a slope exceeding 10% between a building entrance and all vehicular and pedestrian arrival points within 50 feet of the entrance (or to the closest one if none are within 50 feet), then an accessible route to that building entrance is considered impractical. Therefore, the building would not be subject to the accessibility requirements of the Fair Housing Act.

The heavy dotted line between the door threshold and the arrival point in the following illustrations is a measuring and slope determination line only. It is not intended to represent the surface of a ramp or walk. The slope and the length of this line simply will determine whether or not the building entrance is required to be on an accessible route. Once that determination is made, the developer/builder can design any system of ramps, walks, lifts, or other method of providing the necessary access.

The entrances shown in these examples may be either a common or an individual dwelling unit entrance. If the measuring and slope determination line shown has a vertical elevation change less than 30 inches and the slope is less than 10%, the entrance and the route to it must be accessible (meet the Guidelines) as well as the dwelling units on that ground floor.

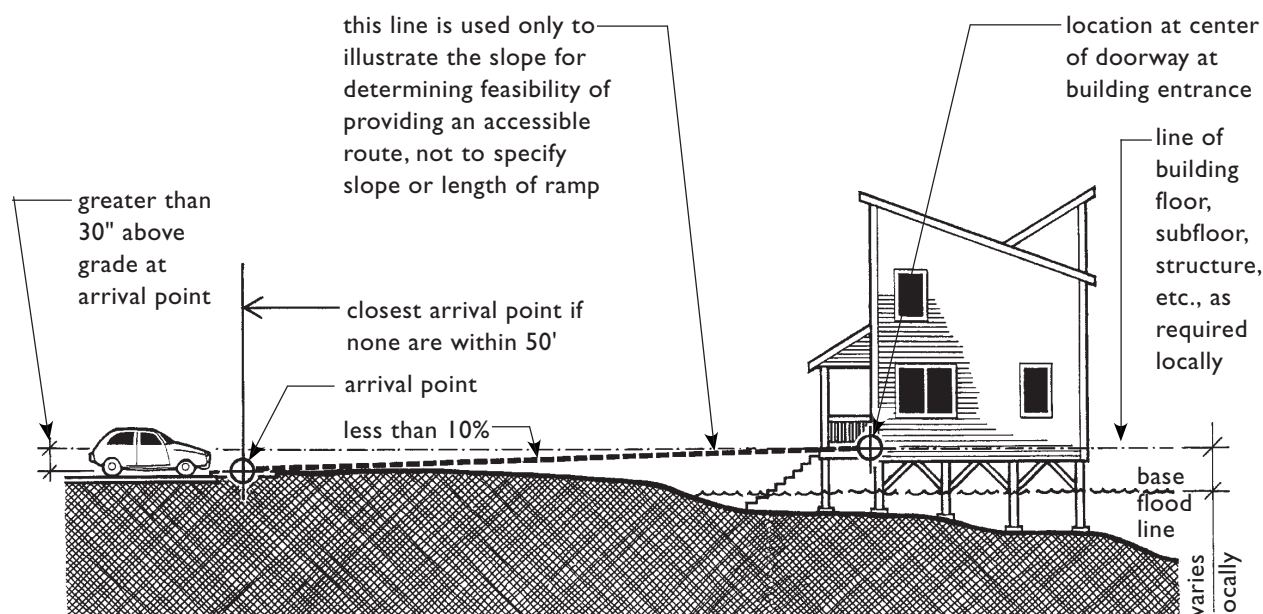
Tree-save ordinances do not constitute an unusual site characteristic that necessarily would exempt a site from complying with the requirements of the Act. However, the Guidelines would not require that a site be graded in violation of a tree-save ordinance. If, however, access is required based on the final site plan, then installation of a ramp for access, rather than grading, could be necessary in some cases so as not to disturb the trees.

Line of building floor, subfloor, underside of lowest structural member, or other measuring point required by local code authority is more than 30" above grade level at the arrival point. In addition, the slope of the measuring line between the entrance and the arrival point is greater than 10%; therefore, the building is not covered.

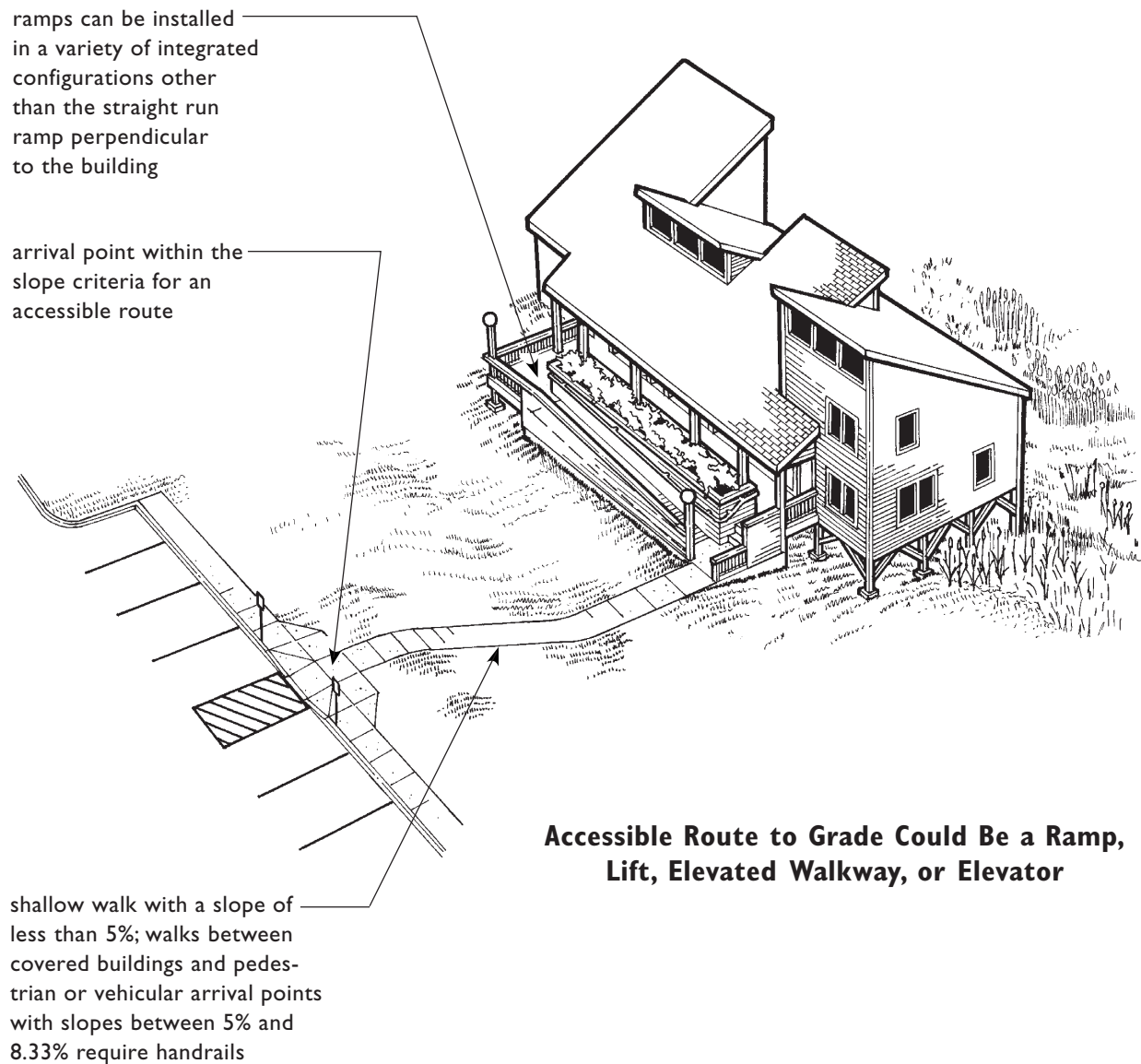


this line is used only to illustrate the slope measurement for determining feasibility of providing an accessible route, not to specify slope or length of ramp

## Building Meets Both Criteria for Exemption



## Building Must Comply With Requirements of the Guidelines



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## Chapter Two:

### REQUIREMENT 2

Accessible and Usable Public  
and Common Use Areas

2



*...covered multifamily dwellings with a building entrance on an accessible route shall be designed in such a manner that the public and common use areas are readily accessible to and usable by handicapped persons.*

**Fair Housing Act Regulations, 24 CFR 100.205**

## Definitions from the Guidelines

**Accessible.** When used with respect to the public and common use areas of a building containing covered multifamily dwellings, means that the public or common use areas of the building can be approached, entered, and used by individuals with physical handicaps. The phrase “readily accessible to and usable by” is synonymous with accessible. A public or common use area that complies with the appropriate requirements of ANSI A117.1 – 1986, a comparable standard or these guidelines is “accessible” within the meaning of this paragraph.

**Common Use Areas.** Rooms, spaces, or elements inside or outside of a building that are made available for the use of residents of a building or the guests thereof. These areas include hallways, lounges, lobbies, laundry rooms, refuse rooms, mail rooms, recreational areas, and passageways among and between buildings.

**Public Use Areas.** Interior or exterior rooms or spaces of a building that are made available to the general public. Public use may be provided at a building that is privately or publicly owned.

## INTRODUCTION

The Fair Housing Accessibility Guidelines (the Guidelines) require public and common use areas and facilities in covered multifamily housing developments to be accessible to people with disabilities so they may benefit from and enjoy the amenities present in the housing development in which they live. Public and common use areas that must be accessible include, but are not limited to, such spaces and elements as selected on-site walks, parking, corridors, lobbies, drinking fountains and water coolers, swimming pool decks or aprons, playgrounds, rental offices, mailbox areas, trash rooms/refuse disposal areas, lounges, clubhouses, tennis courts, health spas, game rooms, toilet rooms and bathing facilities, laundries, community rooms, and portions of common use tenant storage.

The Guidelines require an accessible route (see page 2.15) to public and common use spaces, but not all features or elements within that space may be required to be accessible. The scoping

provisions, or “where,” “when,” and “how many” elements and spaces must be accessible, will be addressed throughout this chapter. For example, where multiple recreational facilities are provided, the Guidelines do not require that each amenity be accessible, but rather that “sufficient numbers” be accessible to provide equitable use by people with disabilities.

In general, however, if each building on a site has its own trash room, lounge area, laundry room, game room, etc., then each of these in each building must be on an accessible route and comply with the applicable portions of an appropriate accessibility standard since they serve different buildings. For an overview of the scoping requirements refer to the illustrations on pages 2.8 through 2.11 and to the chart, taken from the Guidelines, entitled “Basic Components for Accessible and Usable Public and Common Use Areas or Facilities,” reprinted on the next page.



BASIC COMPONENTS FOR ACCESSABLE AND USABLE PUBLIC AND COMMON USE AREAS OR FACILITIES

| Accessible element or space                                                                                                                                                             | ANSI A117.1 section | Application                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Accessible route(s) .....                                                                                                                                                            | 4.3                 | Within the boundary of the site:<br>(a) From public transportation stops, accessible parking spaces, accessible passenger loading zones, and public streets or sidewalks to accessible building entrances (subject to site considerations described in section 5).<br>(b) Connecting accessible buildings, facilities, elements and spaces that are on the same site. On-grade walks or paths between separate buildings with covered multifamily dwellings, while not required, should be accessible unless the slope of finish grade exceeds 8.33% at any point along the route. Handrails are not required on these accessible walks.<br>(c) Connecting accessible building or facility entrances with accessible spaces and elements within the building or facility, including adaptable dwelling units.<br>(d) Where site or legal constraints prevent a route accessible to wheelchair users between covered multifamily dwellings and public or common-use facilities elsewhere on the site, an acceptable alternative is the provision of access via a vehicular route so long as there is accessible parking on an accessible route to at least 2% of covered dwelling units, and necessary site provisions such as parking and curb cuts are available at the public or common use facility. |
| 2. Protruding objects .....                                                                                                                                                             | 4.4                 | Accessible routes or maneuvering space including, but not limited to halls, corridors, passageways, or aisles.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 3. Ground and floor surface treatments .....                                                                                                                                            | 4.5                 | Accessible routes, rooms, and spaces, including floors, walks, ramps, stairs, and curb ramps.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 4. Parking and passenger-loading zones .....                                                                                                                                            | 4.6                 | If provided at the site, designated accessible parking at the dwelling unit on request of residents with handicaps, on the same terms and with the full range of choices (e.g., surface parking or garage) that are provided for other residents of the project, with accessible parking on a route accessible to wheelchairs for at least 2% of the covered dwelling units; accessible visitor parking sufficient to provide access to grade-level entrances of covered multifamily dwellings; and accessible parking at facilities (e.g., swimming pools) that serve accessible buildings.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 5. Curb ramps .....                                                                                                                                                                     | 4.7                 | Accessible routes crossing curbs.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 6. Ramps .....                                                                                                                                                                          | 4.8                 | Accessible routes with slopes greater than 1:20.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 7. Stairs .....                                                                                                                                                                         | 4.9                 | Stairs on accessible routes connecting levels not connected by an elevator.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 8. Elevator .....                                                                                                                                                                       | 4.10                | If provided.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 9. Platform lift .....                                                                                                                                                                  | 4.11                | May be used in lieu of an elevator or ramp under certain conditions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 10. Drinking fountains and water coolers .....                                                                                                                                          | 4.15                | Fifty percent of fountains and coolers on each floor, or at least one, if provided in the facility or at the site.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 11. Toilet rooms and bathing facilities (including water closets, toilet rooms and stalls, urinals, lavatories and mirrors, bathtubs, shower stalls, and sinks.)                        | 4.22                | Where provided in public-use and common-use facilities, at least one of each fixture provided per room.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 12. Seating, tables, or work surfaces .....                                                                                                                                             | 4.30                | If provided in accessible spaces, at least one of each type provided.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 13. Places of assembly .....                                                                                                                                                            | 4.31                | If provided in the facility or at the site.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 14. Common-use spaces and facilities (including swimming pools, playgrounds, entrances, rental offices, lobbies, elevators, mailbox areas, lounges, halls and corridors, and the like.) | 4.1 through 4.30    | If provided in the facility or at the site:<br>(a) Where multiple recreational facilities (e.g., tennis courts) are provided sufficient accessible facilities of each type to assure equitable opportunity for use by persons with handicaps.<br>(b) Where practical, access to all or a portion of nature trails and jogging paths.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 15. Laundry rooms .....                                                                                                                                                                 | 4.32.6              | If provided in the facility or at the site, at least one of each type of appliance provided in each laundry area, except that laundry rooms serving covered multifamily dwellings would not be required to have front-loading washers in order to meet the requirements of § 100.205(c)(1). (Where front loading washers are not provided, management will be expected to provide assistive devices on request if necessary to permit a resident to use a top loading washer.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

Reprint of "Basic Components" chart from the Guidelines. The application column gives guidance on scoping: how many of what kind located where.

## SCOPE OF ANSI AND THE ADA IN PUBLIC AND COMMON USE SPACES

### APPLICATION OF ANSI A117.1 - 1986

The Fair Housing Act references the ANSI A117.1 Standard (*American National Standard for Buildings and Facilities: Providing Accessibility and Usability for Physically Handicapped People*) as an acceptable means of complying with the design requirements of the Act. However, the Act does not exclusively require following ANSI A117.1. The Fair Housing Act regulations of the U.S. Department of Housing and Urban Development (HUD) adopt the ANSI Standard, but specify the 1986 version of the ANSI A117.1 Standard. Likewise, the Guidelines reference specific portions of the 1986 ANSI A117.1 Standard.

The Guidelines are to provide technical guidance and are not mandatory. They provide a safe harbor for compliance with the accessibility requirements of the Act.

The “Purpose” section in the Guidelines states that “Builders and developers may choose to depart from these guidelines and seek alternate ways to demonstrate that they have met the requirements of the Fair Housing Act.” If an accessibility standard other than the ANSI A117.1 Standard is followed, care must be taken to ensure the standard used is at least equivalent to or stricter than the 1986 ANSI A117.1 Standard. See also the ANSI Standard discussion in the Introduction on page 13.

The Guidelines, in some instances, modify the ANSI specifications and, in other instances, substitute specifications. The illustrations in this chapter provide an overview of many of the key requirements for public and common use areas.

When designing these areas it is essential to refer to the 1986 ANSI A117.1 Standard specifications 4.1 through 4.31, as appropriate (or an equivalent or stricter standard), for detailed dimensional design specifications for each required accessible element or space.

**Note:** When this Manual states the ANSI Standard or the ANSI A117.1 Standard “must be followed” it means the 1986 ANSI A117.1 Standard or an equivalent or stricter standard.

#### ANSI Technical Specifications for Accessible Elements and Spaces

- 4.1 Basic Components
- 4.2 Space Allowances and Reach Ranges
- 4.3 Accessible Route
- 4.4 Protruding Objects
- 4.5 Ground and Floor Surfaces
- 4.6 Parking Spaces and Passenger Loading Zones
- 4.7 Curb Ramps
- 4.8 Ramps
- 4.9 Stairs
- 4.10 Elevators
- 4.11 Platform Lifts
- 4.12 Windows
- 4.13 Doors
- 4.14 Entrances
- 4.15 Drinking Fountains and Water Coolers
- 4.16 Water Closets
- 4.17 Toilet Stalls
- 4.18 Urinals
- 4.19 Lavatories, Sinks, and Mirrors
- 4.20 Bathtubs
- 4.21 Shower Stalls
- 4.22 Toilet Rooms, Bathrooms, Bathing Facilities, and Shower Rooms
- 4.23 Storage
- 4.24 Grab Bars, and Tub and Shower Seats
- 4.25 Controls and Operating Mechanisms
- 4.26 Alarms
- 4.27 Detectable Warnings
- 4.28 Signage
- 4.29 Telephones
- 4.30 Seating, Tables, and Work Surfaces
- 4.31 Auditorium and Assembly Areas

## **PUBLIC AND COMMON USE AREAS NOT COVERED BY THE GUIDELINES**

Where a newly constructed development consists entirely of buildings of four or more **multistory dwelling units without elevators** (e.g., two-story townhouses), the development is not required to comply with the Fair Housing Act or the Guidelines. Since there are no covered multifamily dwellings on the site, no public and common use areas anywhere on the site are required to be accessible. Note, however, that the Americans with Disabilities Act (ADA) of 1990 may apply. See the discussion of the ADA in the next column.

However, in housing developments of two- or three-story walk-up buildings where the ground floor dwelling units are single-story, all the ground floor units are covered (unless site impracticality can be claimed, see Chapter 1: “Accessible Building Entrance on an Accessible Route”) and must be on an accessible route with accessible entrances. Since an accessible route does not go to the upper floors, then the stairs up to those dwelling units, and the halls, corridors, and entry doors on the upper floors are not covered by the requirements of the Guidelines.

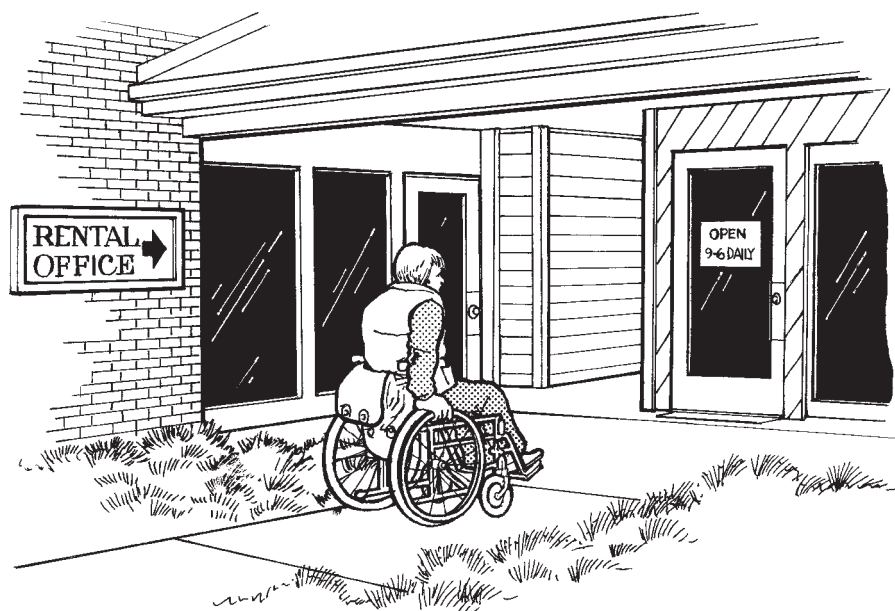
Of course, public and common use facilities must be accessible and cannot be located on upper floors of buildings which do not have an elevator(s), unless similar facilities also are located on the ground floor. For example, it would not be acceptable to have a common use trash room on the second floor of a building and not have one on the ground floor of the same building.

## **IMPACT OF THE AMERICANS WITH DISABILITIES ACT (ADA) ON PUBLIC AND COMMON USE SPACES**

The dwelling units of private multifamily housing developments generally are not required to meet the accessibility provisions of the Americans with Disabilities Act Accessibility Guidelines (ADAAG). However, some public and common use spaces such as rental offices and sales offices are considered “public accommodations” under Title III of the ADA because, by their nature, they are open to people other than residents and their guests. They, therefore, must comply with the ADA requirements in addition to all applicable requirements of the Fair Housing Act.

Other buildings and amenities in a housing development, such as laundry buildings and recreational facilities (clubhouses, swimming pools, spas, game rooms, and exercise rooms), will be covered by the ADA **only** if they are available for use by people other than residents and their guests. If such facilities are made available to the public only periodically, such as for a festival or seasonal event, they must comply with the ADA during the event.

Fortunately the ANSI and the ADAAG have similar technical specifications for most features. However, there are some differences in scope and technical requirements. For example, the ADAAG requires designated parking spaces for vans. For more discussion of this, see page 2.20 “Access Aisles.” Since this document presents the ANSI specifications cited in the Fair Housing Act, the reader is advised to consult ADAAG only when public and common use facilities are to be available to the general public.



### **MULTIPLE RECREATIONAL FACILITIES**

Where multiple recreational facilities of the same type are provided at the same location on the site (e.g., tennis courts), not all but a “sufficient” number of the facilities must be accessible to ensure an equitable opportunity for use by people with disabilities. It is recommended that all recreational facilities be accessible when the site is relatively flat and this can be easily achieved. Whenever only one of a type of recreational facility is provided at a particular location on the site, it must be accessible and connected by an accessible route to the covered dwelling units. In instances where each building or cluster of buildings is served by its own recreational facility e.g., a swimming pool, then the facility must be on an accessible route from the covered dwelling units.

In the case of recreational facilities, special equipment and features are not required by the Guidelines. For example, play areas for children and swimming pool aprons must be accessible and

meet ANSI specifications for all commonly constructed elements, but special mechanical pool lifts or wheelchair accessible play equipment are not required. The Guidelines do not require an accessible route (ramp or lift) down into the water at pools.

### **Public and Common Use Space Covered by the ADA**

Places of public accommodation subject to the requirements of Title III of the ADA include:

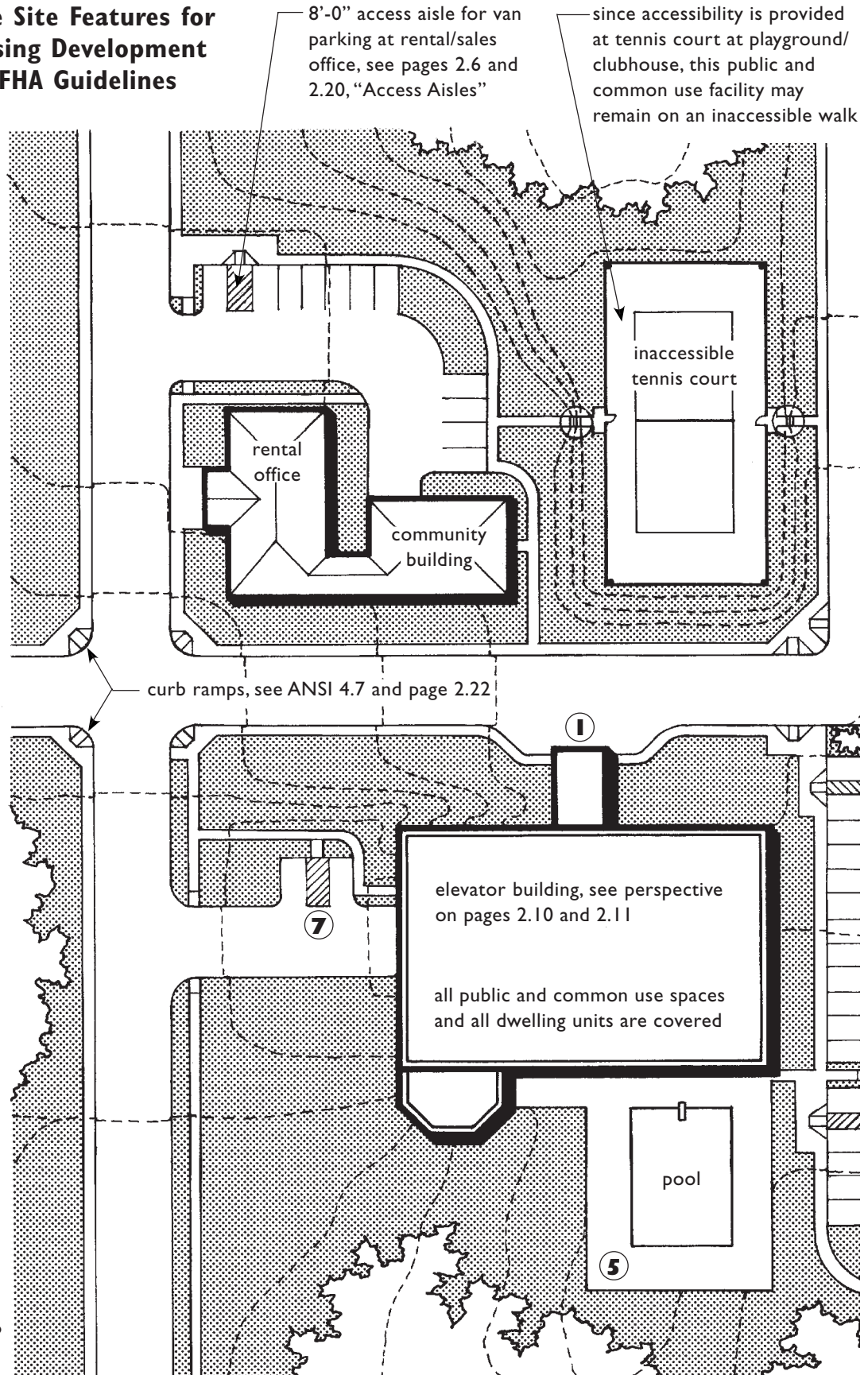
1. places of lodging, 2. establishments serving food or drink,
3. places of exhibition or entertainment, 4. places of public gathering,
5. sales or rental establishments, 6. service establishments, 7. stations used for specified public transportation, 8. places of public display or collection, 9. places of recreation,
10. places of education, 11. social service center establishments, and 12. places of exercise or recreation.

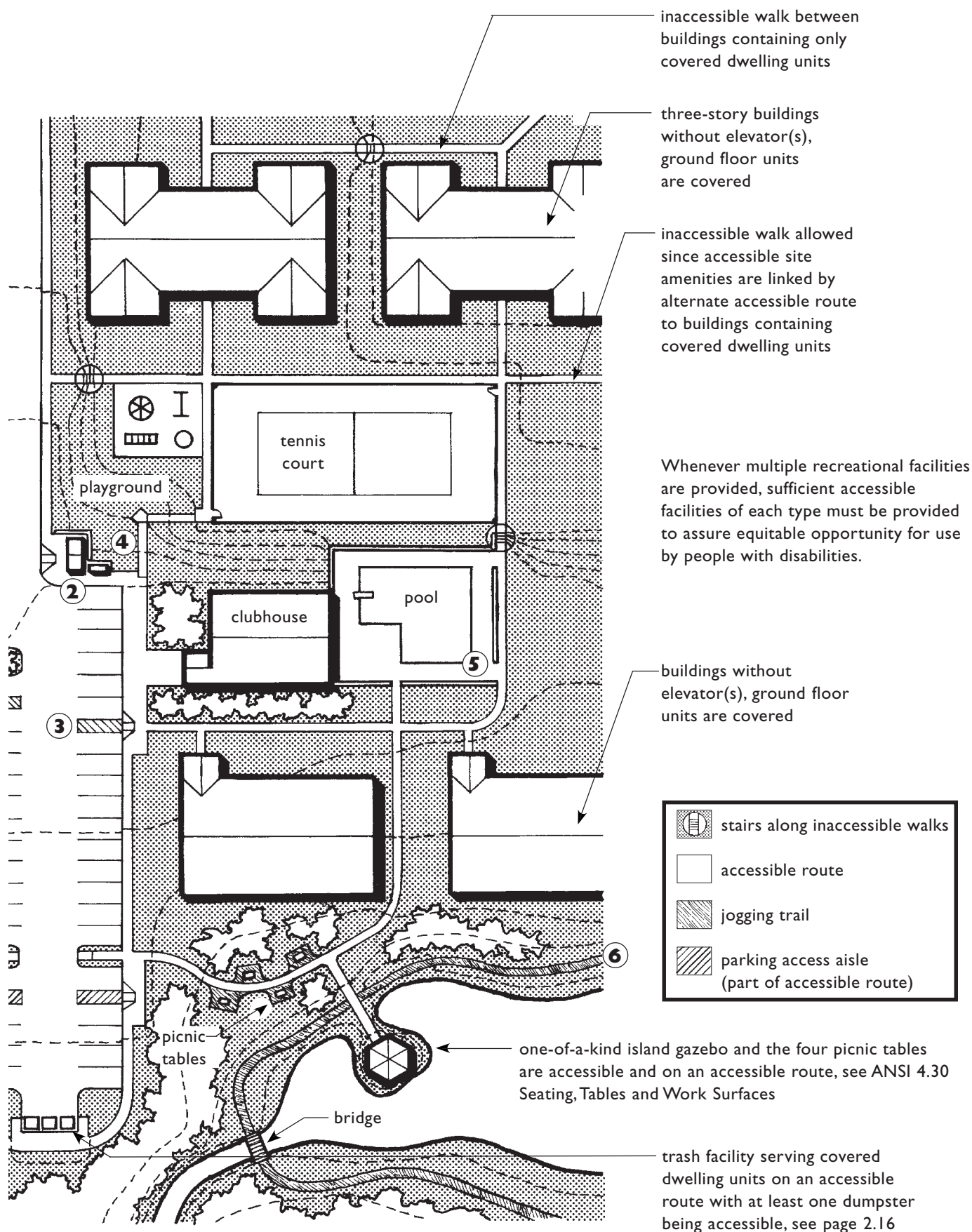
**28 CFR Part 36, Section 36.104.**

#### **Definitions**

### Example: Accessible Site Features for a Multifamily Housing Development Covered by the FHA Guidelines

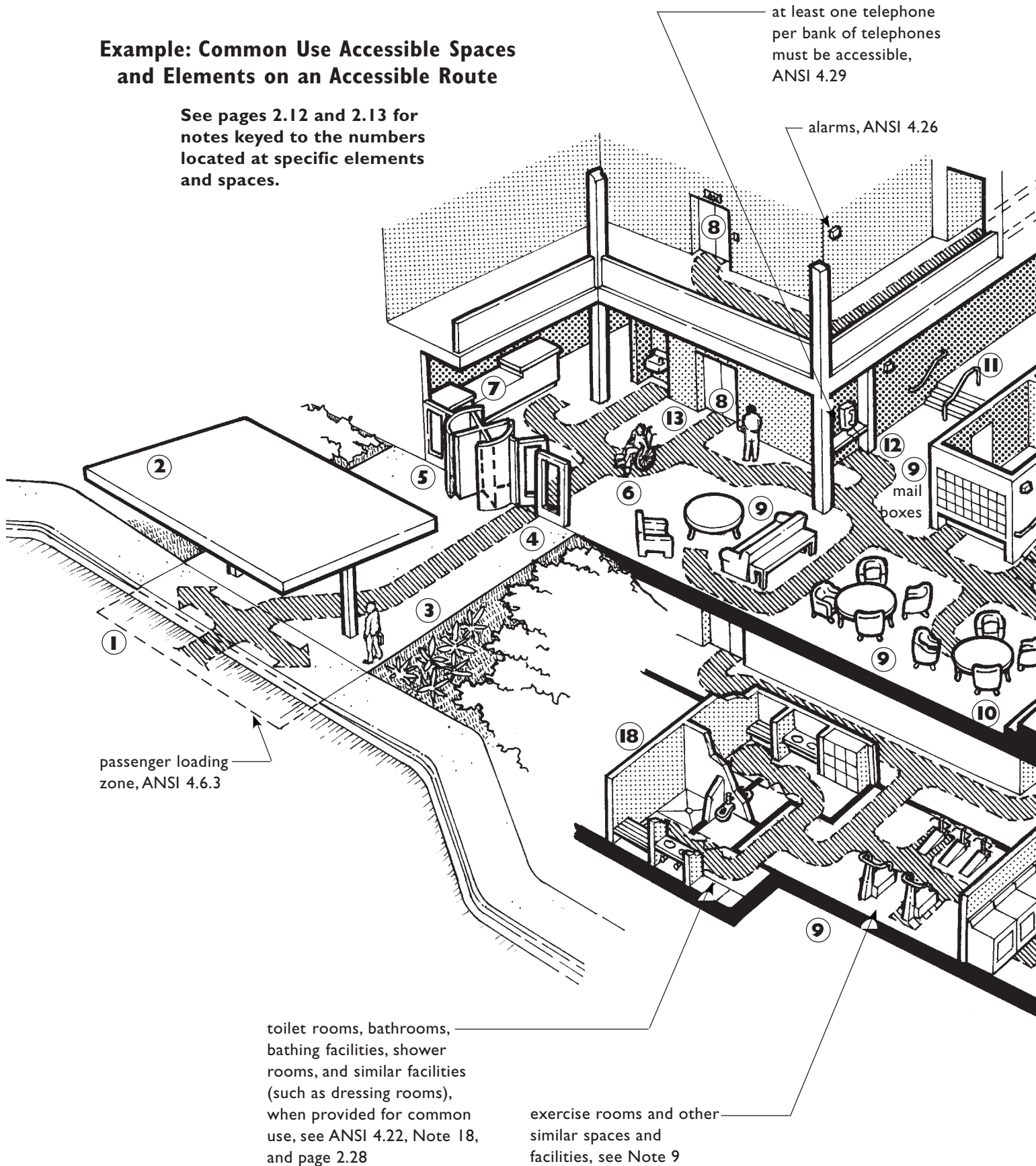
- ① accessible passenger loading zone, see ANSI 4.6
- ② accessible bus shelter (pedestrian arrival point) on an accessible route, see drawing on page 1.6
- ③ accessible resident and visitor parking, see page 2.23
- ④ ramp from upper level of site with tennis court to lower level with clubhouse is part of a required accessible route and must meet ANSI 4.8 Ramps
- ⑤ both pools must be on an accessible route that continues around the apron (access into water not required) since they serve separate buildings containing covered dwelling units
- ⑥ all or a portion of jogging trails must be accessible where practical; this trail is accessible from this point to bridge (smooth, level, paved surface with no abrupt change in level); beyond bridge, trail is inaccessible
- ⑦ van accessible space, see page 2.13, note 16

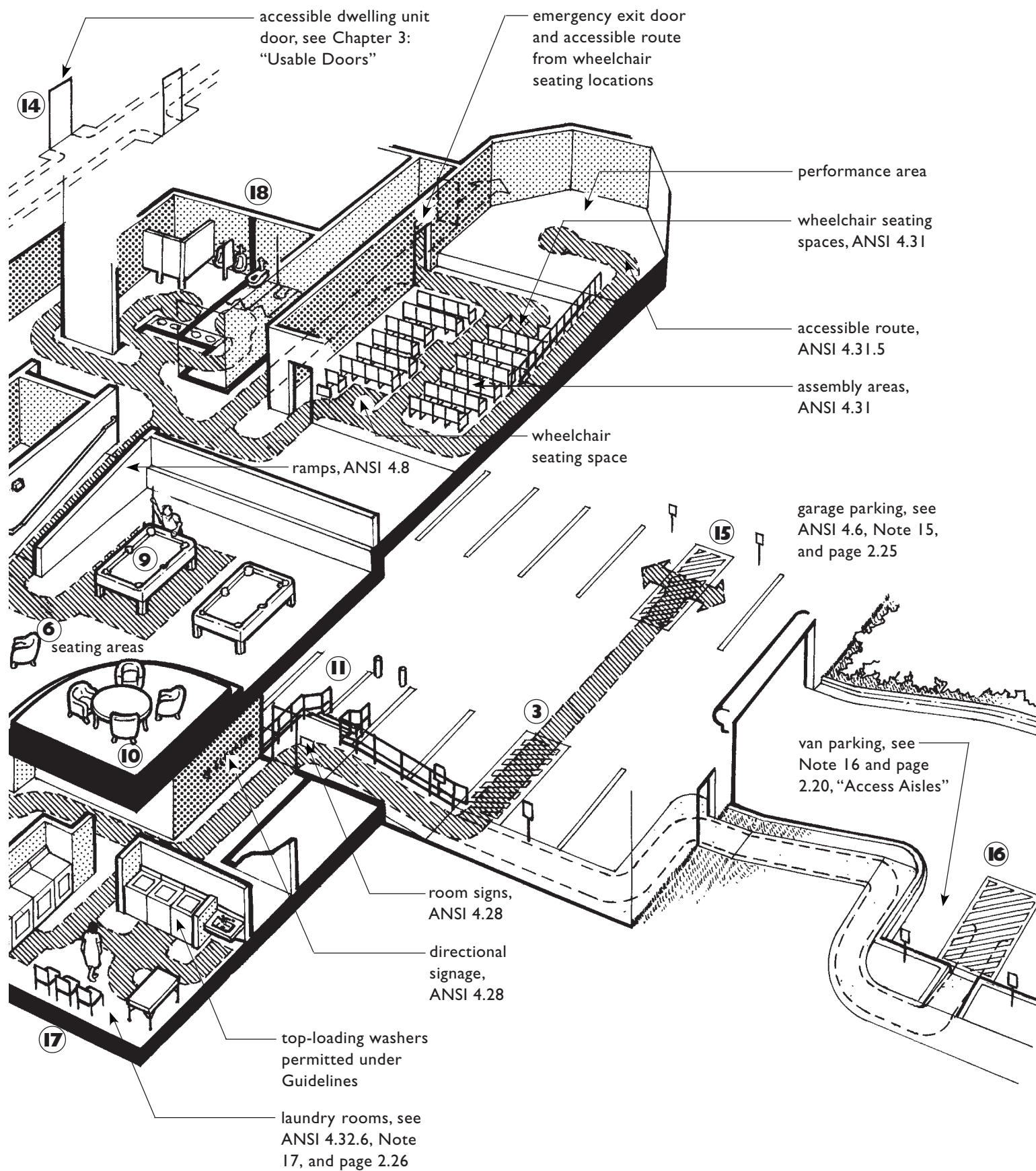




### Example: Common Use Accessible Spaces and Elements on an Accessible Route

See pages 2.12 and 2.13 for notes keyed to the numbers located at specific elements and spaces.





The following numbered notes are keyed to the perspective “Example: Common Use Accessible Spaces and Elements on an Accessible Route” appearing on pages 2.10 and 2.11. Each note contains selected technical design references and explanations based on the FHA Guidelines and the ANSI A117.1 - 1986.

**1**

**Passenger Loading Zones.** Passenger loading zones must have a large clear pedestrian access aisle connected by an accessible route to accessible building entrances. They also must have sufficient headroom to clear buses or vans with high roofs. See ANSI 4.6 and Notes 2 and 3 below.

**2**

**Overhanging Objects.** Roofs, tree limbs, or other elements that overhang passenger loading zones must be kept high enough to clear buses or vans with high roofs. See ANSI 4.6.

**3**

**Accessible Route.** Accessible routes must connect accessible transportation stops, parking spaces, passenger loading zones, and public streets and sidewalks within the boundaries of the site to accessible entrances. See ANSI 4.3, Note 6, and page 2.15.

**4**

**Accessible Entrance.** Doors along accessible routes must meet ANSI 4.13. See also Chapter 1: “Accessible Building Entrance on an Accessible Route.”

**5**

**Revolving Doors.** Revolving doors generally cannot meet the requirements of ANSI 4.13, and, therefore, cannot be the only means of passage at an accessible entrance or on an accessible route.

**6**

**Accessible Route.** An accessible route must connect accessible building or facility entrances with accessible spaces and elements within the building or facility, including adaptable (or covered) dwelling units. See also ANSI 4.3, Note 3, and page 2.15.

**7**

**Reception Desk.** Accessible reception desks are not specifically described in ANSI. This common use facility must be accessible to people with disabilities and should comply with the applicable specifications of ANSI 4.1 - 4.31. See also Note 9.

**8**

**Elevators.** All elevators, if provided, must comply with ANSI 4.10.

**9**

**Multiple Elements, Features, or Spaces.**

Whenever one of a type of element, feature, or space is provided for public or common use of residents, it must be on an accessible route and meet the applicable specifications of ANSI. Whenever multiple features or facilities are provided, sufficient accessible features of each type must be provided to assure equitable opportunity for use by people with disabilities.

When ANSI does not contain specifications for the specific facility or feature in question, then related human factors and performance specifications must be used to achieve accessibility. Such specifications include, but are not limited to, 4.2 Space Allowances and Reach Ranges, 4.3 Accessible Route, 4.4 Protruding Objects, 4.5 Ground and Floor Surfaces, and 4.25 Controls and Operating Mechanisms.

**10**

**Raised or Sunken Floor Areas.** Small raised or sunken floor areas within a single space or room not connected by an accessible route may be allowed, provided that any facilities or elements on the raised or lowered area also are provided on the main or accessible floor area in the same room or space. In many building codes raised areas, such as mezzanines, are limited to a maximum of 33-1/3 percent of the floor area of the space in which they are located. This seems to be a reasonable limiting percentage for a cumulative total of the entire inaccessible raised and lowered floor areas. The majority of all facilities or elements must be on the accessible floor area and be served by an accessible route. The raised or sunken area must not prevent an accessible route from serving other accessible areas, facilities, or elements; it must not require people with disabilities to take a circuitous route or travel an inordinate additional distance to reach the accessible space.

**11**

**Stairs Along Accessible Routes.** A properly designed ramp is considered to be an acceptable part of an accessible route. However, since some users are safer on stairs than on ramps, it is best if stairs are provided in combination with ramps. This is especially true when they are located along an accessible route connecting levels not connected by an elevator. Such stairs are required to meet the ANSI requirements since they will be used by people with particular disabilities for whom steps are easier to traverse than ramps. See page 2.17 for further discussion of stairs along accessible routes.

**12**

**Protruding Objects.** The corridor space is an accessible route and like all accessible routes and maneuvering areas, it must be free of hazardous protruding objects that project from walls and posts and are dangerous to someone who is inobservant or a person with a visual impairment. See ANSI 4.4 Protruding Objects and page 2.18.

**13**

**Drinking Fountains and Water Coolers.** Where drinking fountains or water coolers are provided, 50 percent on each floor, or at least one, must be on an accessible route and comply with ANSI 4.15.

**14**

**Doors to Covered Units.** Doors to adaptable (or covered) dwelling units must meet ANSI 4.13 on the exterior or public and common use side, but need only meet Guidelines Requirement Three: Usable Doors on the inside. See Chapter 3: “Usable Doors.”

**15**

**Parking.** Where parking is provided on a multifamily building site, accessible parking spaces on an accessible route are required for residents and visitors. To comply with the Guidelines, such spaces must meet the ANSI 4.6 specifications for parking. The accessible parking that serves a particular building should be located on the shortest possible accessible circulation route to an accessible entrance of the building.

**16**

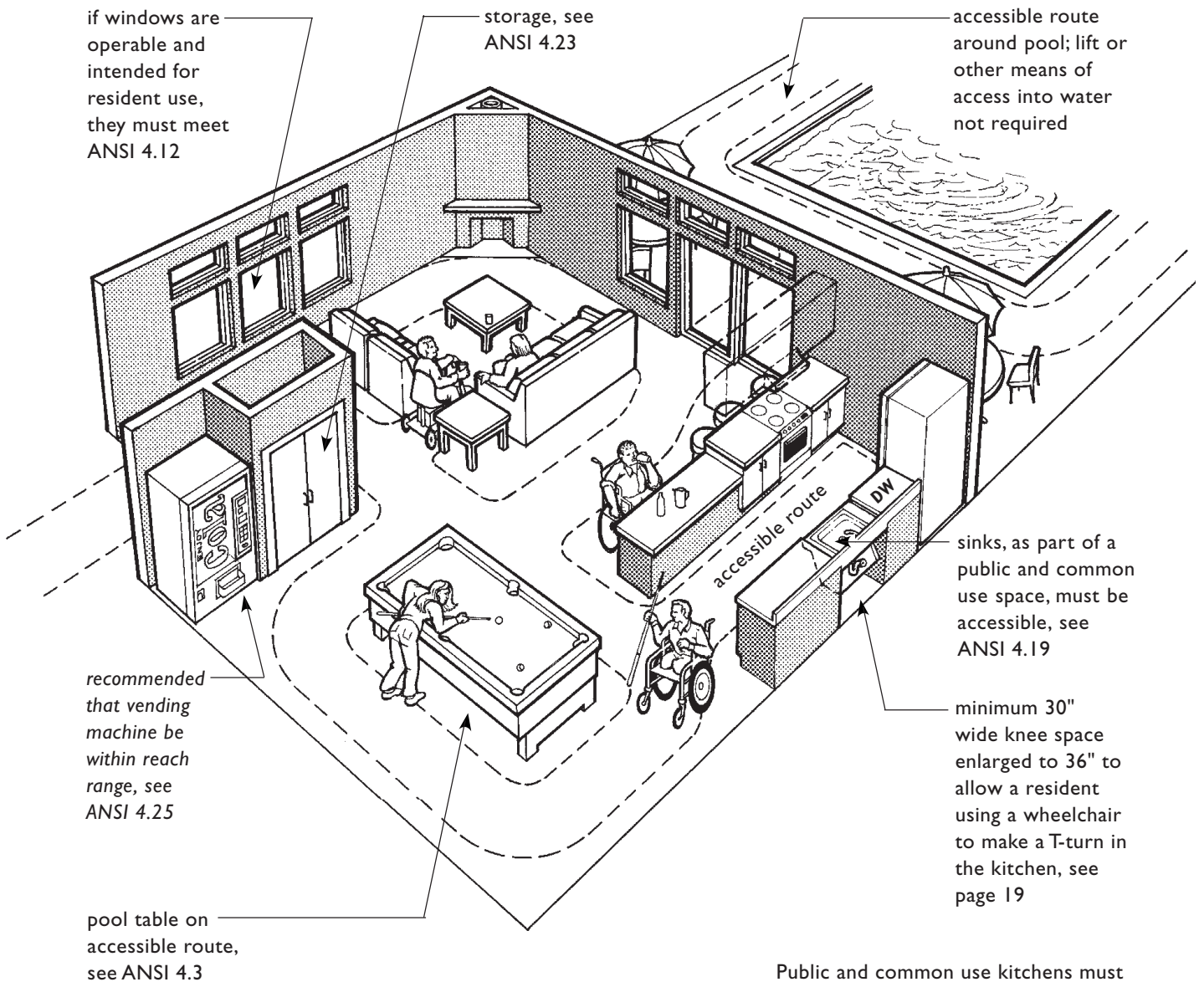
**Van Parking.** The Guidelines do not require special van parking, but they do require headroom over passenger loading zones for vans. ANSI accessible parking spaces, when located in parking garages, may or may not have sufficient headroom to accommodate vans. Also, the 60-inch access aisle specified in ANSI is not wide enough for vans with side-mounted lifts. For these reasons, it is recommended, where accessible parking is located in garages not having headroom equal to that required by ANSI at loading zones, additional supplemental designated van parking spaces be placed outdoors and furnished with an 8-foot (96 inches) wide access aisle and an accessible route to the garage or other entrances of the building.

**17**

**Laundry Rooms.** Where laundry rooms are provided for common use of residents, at least one of each type of appliance provided in each laundry area must be accessible, see ANSI 4.32.6. Note, however, front-loading machines are not required. The accessible route into the room must adjoin a clear floor space to permit a person using a wheelchair to make a parallel or forward approach (see page 5.5) to at least one of each type of appliance, i.e., washing machines, dryers, and soap dispensers. If related features are provided in laundry rooms, such as wash sinks, tables, and storage, at least one of each type must be accessible and comply with applicable ANSI specifications. See page 2.26.

**18**

**Toilet Rooms, Bathrooms, Bathing Facilities, and Shower Rooms.** Where toilet rooms and bathing facilities are provided for public use or common use of residents, at least one fixture of each type provided must be accessible per room. See page 2.28 and ANSI 4.22. If related features are provided, such as lockers, at least one of each type must be accessible and comply with applicable ANSI specifications including 4.2 Space Allowances and Reach Ranges, 4.25 Controls and Operating Mechanisms, and 4.23 Storage.



### Accessible Elements and Features of a Public and Common Use Clubhouse

Public and common use kitchens must be usable and at least meet the requirements in the Guidelines for kitchens. If preferred, the requirements for kitchens in ANSI 4.32 could be followed.

*Notes in italic type are recommendations only and are not required by ANSI or the Guidelines. All recommended features are helpful to people with and without disabilities.*

## SELECTED TOPICS ON ACCESSIBLE PUBLIC AND COMMON USE SPACES AND FACILITIES

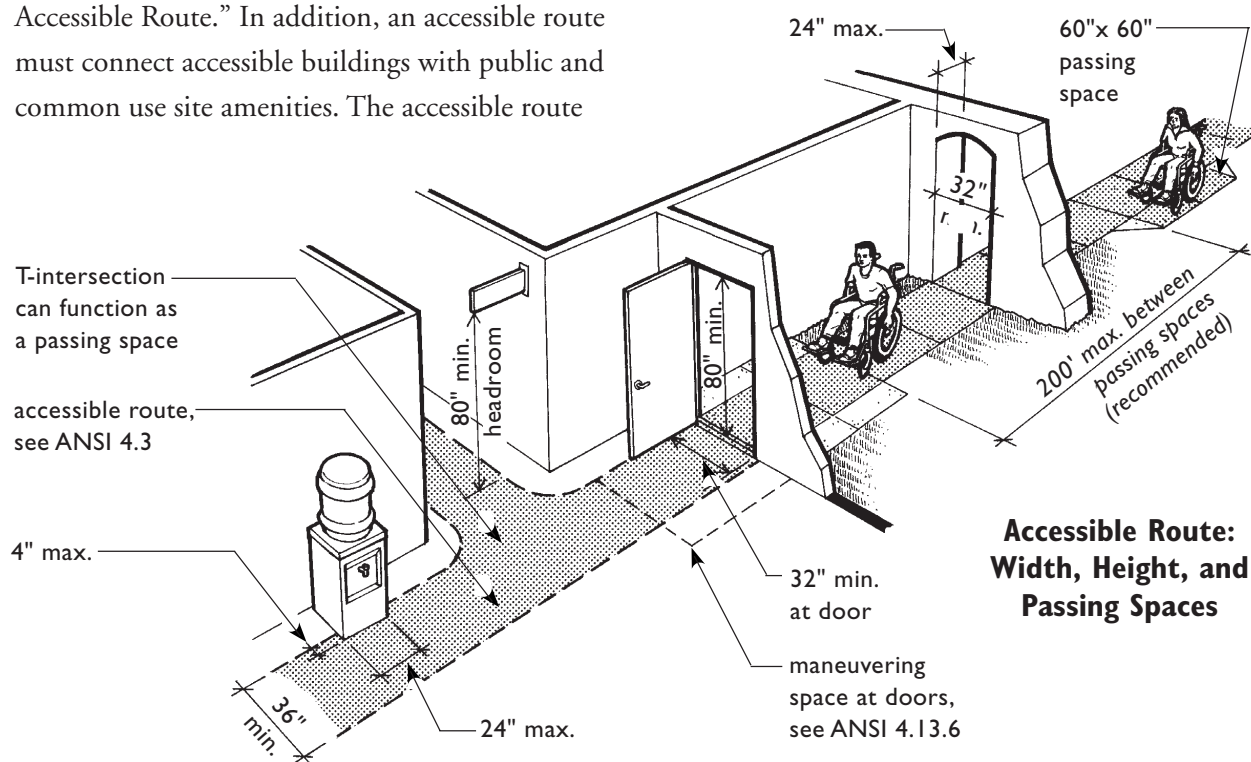
The following is additional explanatory text and illustrations describing selected topics related to accessible public and common use spaces and facilities covered by the Guidelines.

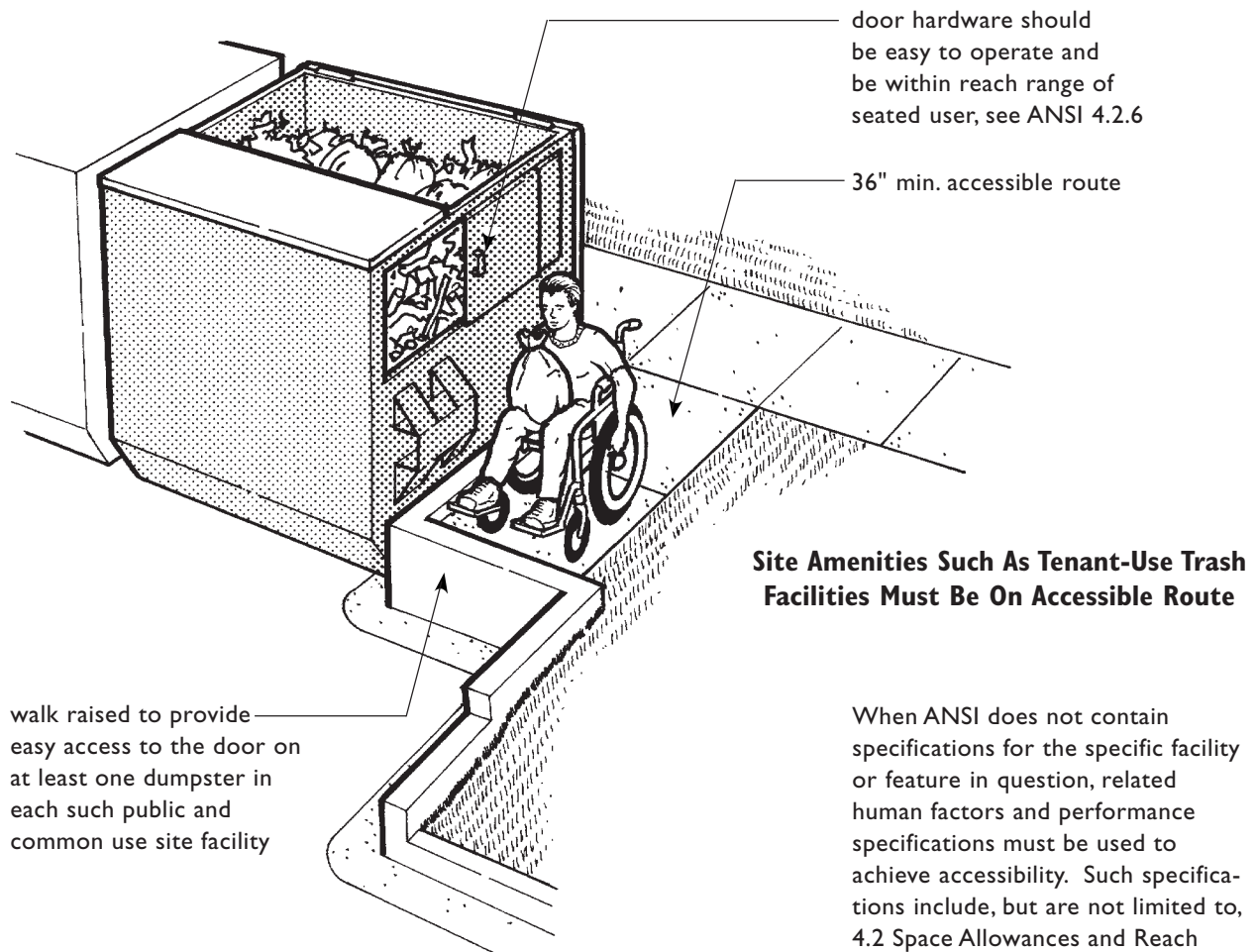
### ACCESSIBLE ROUTE

An accessible route is a path that is at least 36 inches wide, smooth, as level as possible, and without hazards or obstructions. Within the boundary of the site, an accessible walk or route on a site must connect public transportation stops, accessible parking spaces, accessible passenger loading zones, and public streets and sidewalks to accessible building entrances. Such accessible walks and routes are subject to site constraints discussed in Chapter 1: “Accessible Building Entrance on an Accessible Route.” In addition, an accessible route must connect accessible buildings with public and common use site amenities. The accessible route

links all accessible elements and features on a site and within a building, making it possible for people with a wide range of disabilities to maneuver safely and use a facility successfully.

Exterior accessible routes include but are not limited to parking access aisles, passenger loading zones, curb ramps, crosswalks at vehicular ways, walks, ramps, and lifts. See Chapter 1: “Accessible Building Entrance on an Accessible Route” for additional discussion of accessible routes on sites. As the accessible route continues into a building, it may include corridors, doorways, floors, ramps, elevators, lifts, and clear floor space at fixtures. Accessible routes also may include sky walks, tunnels, garages, and parts of many public and common use spaces. ANSI 4.3 contains complete technical specifications for accessible routes, including width, headroom, surface texture, slope, changes in level, doors, and egress in emergencies.





### **WALKS EXEMPT FROM ACCESSIBLE ROUTE REQUIREMENTS**

On-grade walks between separate buildings containing only covered dwelling units are not required to be accessible. However, if the grade of walks between buildings containing only dwelling units does not exceed 8.33%, it is recommended that these walks meet the requirement for accessible routes and not be interrupted by steps. If these walks are made accessible, handrails will not be required on any part of the walk where the slope is between 5% and 8.33%.

It is important to note, however, that if walks between buildings containing only covered dwelling units are also part of a required accessible route—for example, if the walk serves as the route to a common use facility located nearby—then the route would be required to be accessible. (See page 1.8, “Accessible Routes and Walks Between Accessible Buildings and Site Facilities.”)

## STAIRS AND ACCESSIBLE ROUTES

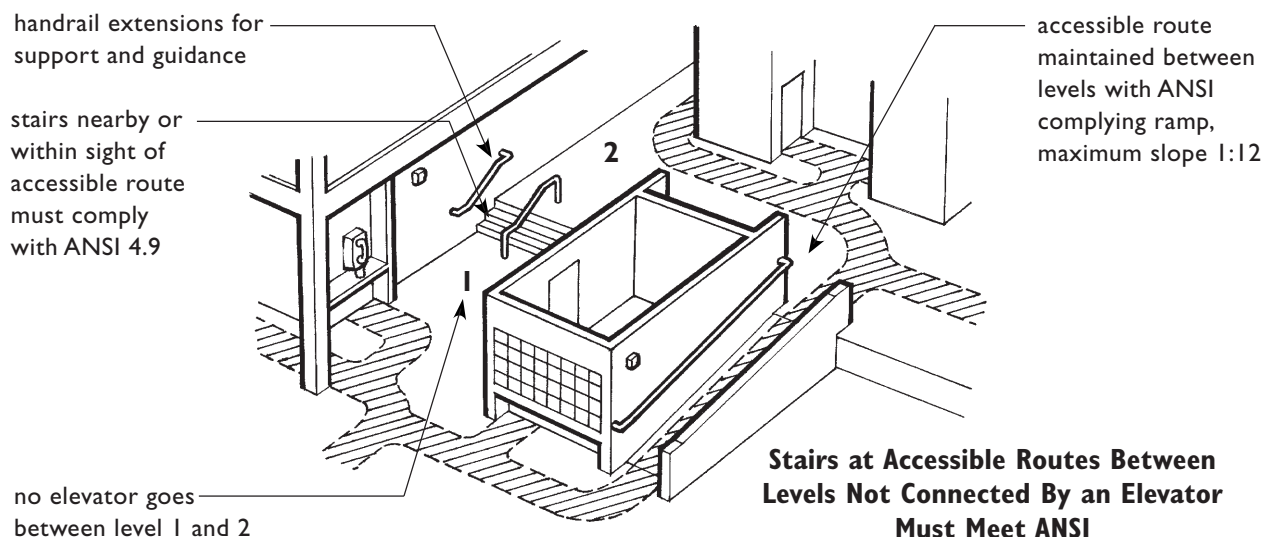
By definition and ANSI 4.3.8 Changes in Level, a stair can never be part of an accessible route, i.e., a stair can never interrupt or be part of the path of an accessible route. Elevators, ramps, and mechanical lifts, however, can be part of an accessible route. In view of the fact that some users have difficulty walking on ramps and are safer using appropriately designed stairs, it is always best that stairs be placed adjacent to or nearby ramps that are used to provide an accessible route between levels not served by elevators.

The ANSI and the Guidelines “Application” charts both state “stairs on accessible routes connecting levels not connected by an elevator” must comply with ANSI 4.9 Stairs. However, the preamble to the Guidelines states “stairs are subject to the ANSI Standard only when they are located **along** an accessible route not served by an elevator.” Therefore, “along” and “on” are interpreted to have the same meaning, especially given the definition of an accessible route that states a stair cannot be part of an accessible route. Thus, “along” and “on” are intended to mean either “adjacent to” or “nearby.”

Nearby in this case means within the same area or within sight of the accessible route or at an unseen location indicated by directional signage. See the example in the illustration below.

In buildings that do not have elevator(s), the Guidelines do not require stairs serving floors above or below the ground floor to meet the ANSI standard. It should be noted, however, that any applicable state or local law or code that sets a stricter standard, may require the stairs to be accessible.

For example, if the local building code has adopted the 1986 ANSI A117.1 Standard, then ANSI 4.9.1 would be applicable. ANSI 4.9.1 states, “Stairs that are required as a means of egress and stairs between floor levels not connected by an elevator shall comply with 4.9.” Because most stairs in nonelevator buildings are provided either to connect floors not connected by an elevator or are stairs required as a means of egress, this would mean that virtually all stairs, including monumental or decorative stairs, would have to comply. Therefore, it is important to check state or local laws for their applicability to stairs.



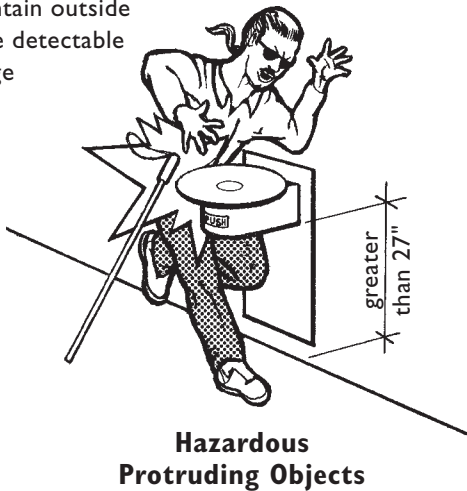
## PROTRUDING OBJECTS

Many people with visual impairments use a long cane for guidance. The cane is used to follow a “shoreline” such as the edge of a sidewalk or a curb or, indoors, the baseboard of a wall. The cane, when swept ahead of the user, also detects obstacles in the path. Objects which protrude from walls or hang from overhead are not detectable and are, therefore, hazardous because a person with a visual disability can not avoid running into them.

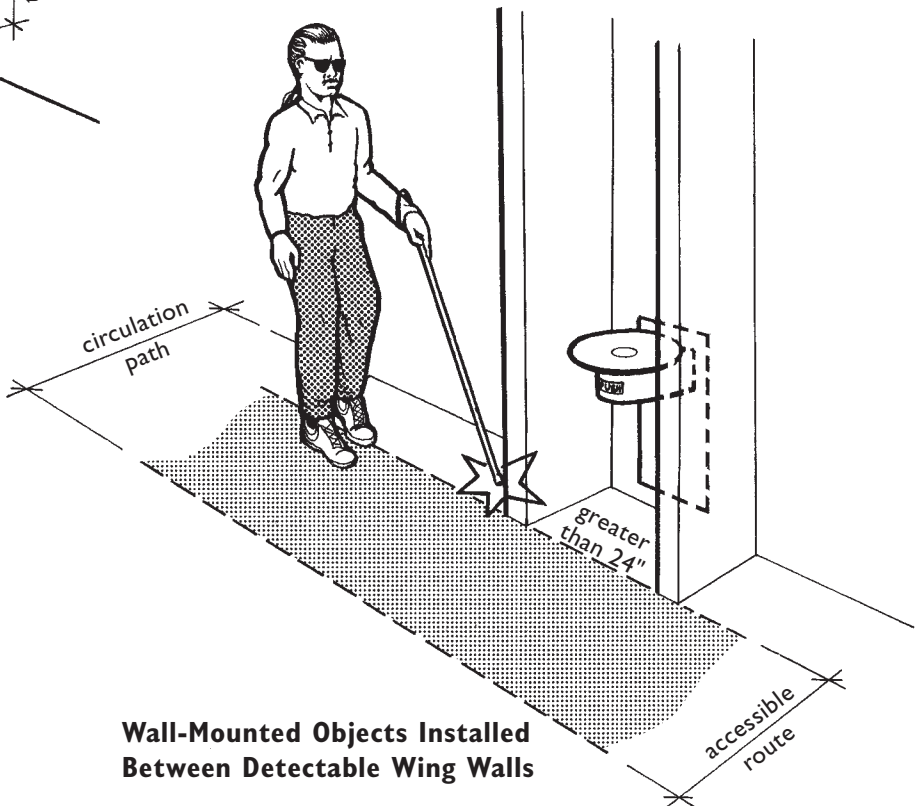
Detectable items are obstacles that can be maneuvered around.

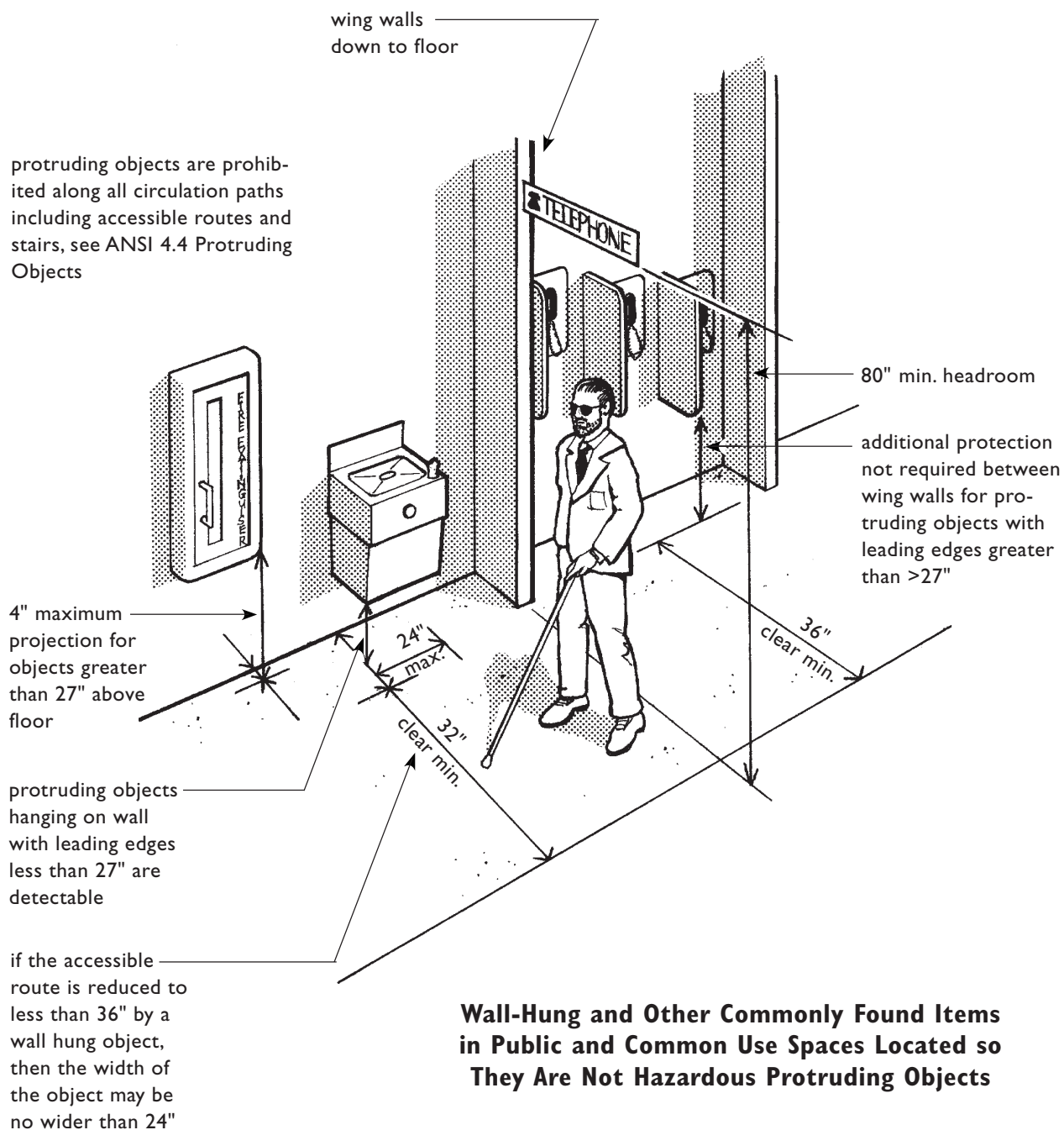
There must always be a 36-inch wide accessible route around any obstacle. Large wall-mounted items such as fire extinguishers and telephone enclosures must be recessed, set in alcoves, or designed so they have structures extending close to the floor, no higher than 27 inches, and within the long cane detectable area.

bottom edge of  
fountain outside  
cane detectable  
range



wing walls or other  
detectable warning  
barrier must not  
reduce accessible  
route



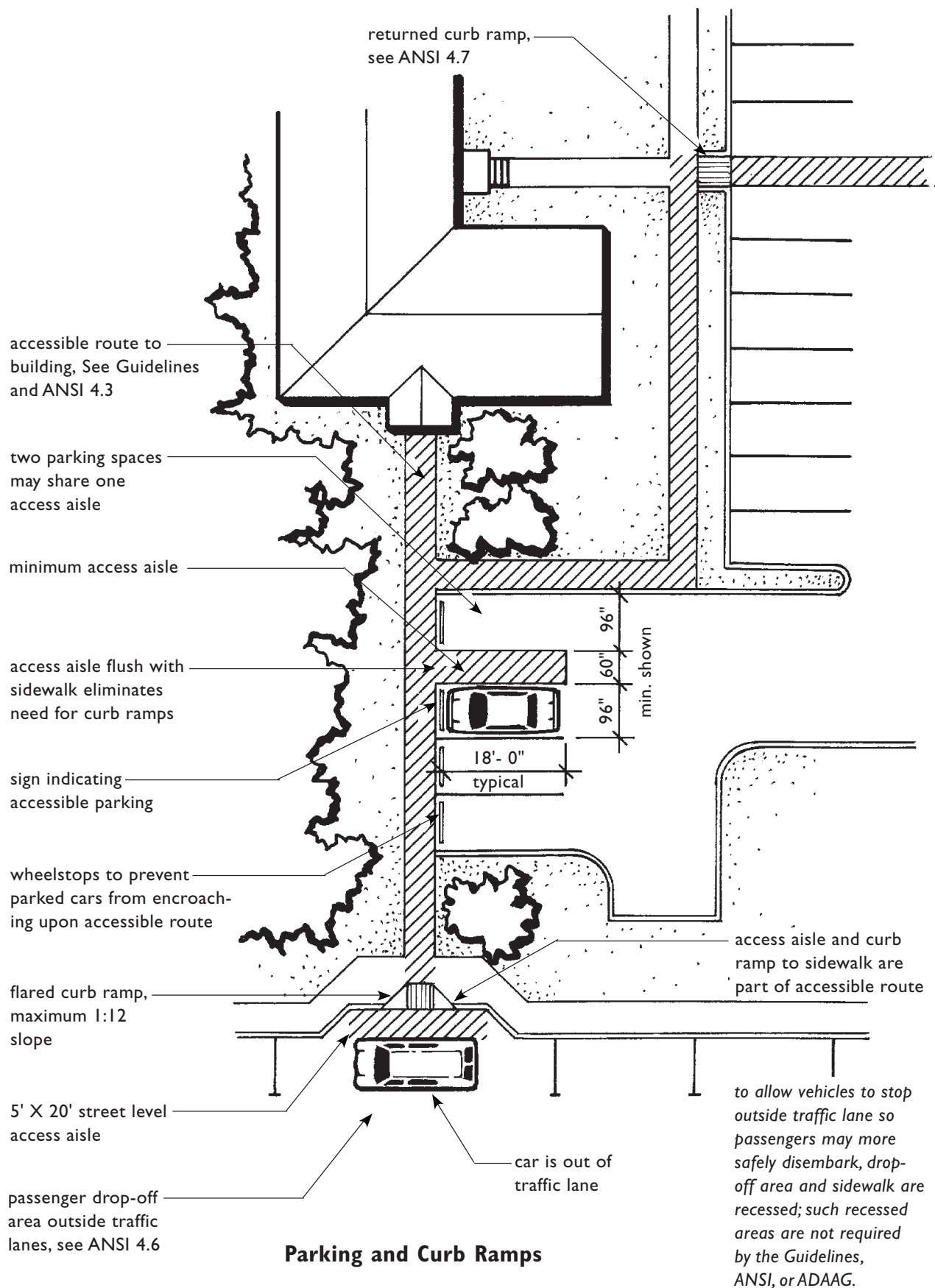


## **ACCESSIBLE PARKING ON AN ACCESSIBLE ROUTE**

When parking is provided on a residential site, accessible parking spaces on an accessible route must be provided for residents and visitors. Accessible parking spaces must meet the requirements for parking in ANSI 4.6 and be located on the shortest possible accessible circulation route to an accessible entrance, subject to site considerations in Chapter 1.

**Access Aisles.** Parking spaces must be wide enough to allow people using wheelchairs or mobility aids to move between cars and to enter cars or vans. Accessible parking spaces must be at least 96 inches wide and have an adjacent access aisle that is 60 inches wide. This 60-inch access aisle is regarded as a minimum, and although it is adequate for people using wheelchairs who can transfer into and out of cars, it is too narrow for safe and comfortable use for people who drive vans. The Guidelines do not require nor specify the size of van-accessible access aisles. The only nationally accepted design standard that contains such a specification is the Americans with Disabilities Act Accessibility Guidelines (ADAAG), which specify that a van parking access aisle must be at least 96 inches wide and is required at sales and rental offices. See page 2.6.

**Curb Ramps.** Curb ramps are transitions between roads, parking areas, access aisles, and sidewalks that allow a pedestrian route to remain accessible to people who use wheelchairs and other mobility aids, see ANSI 4.7. Curb ramps are a necessity for people with mobility impairments but are a hazard to people who are blind who use the curb as a “cue” to know when they are entering the street. The ANSI Standard requires a texture on curb ramp surfaces to make them detectable. These textures often do not provide enough of a cue and a person with a visual impairment may inadvertently enter the street. Locating curb ramps out of the usual line of pedestrian flow and “shorelines” (edge between sidewalk and grass or other cane detectable surface) is one solution to this problem. See drawing at the bottom of page 2.22.

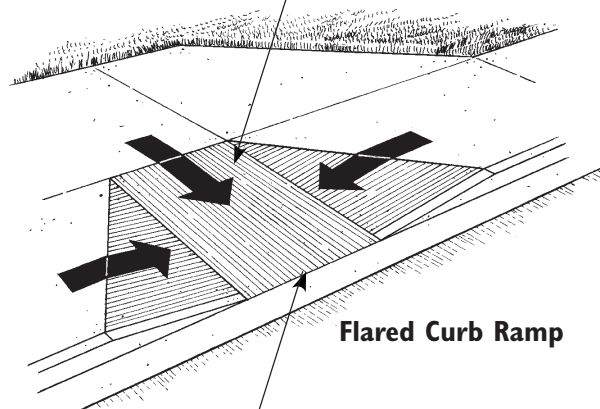


**Parking and Curb Ramps**

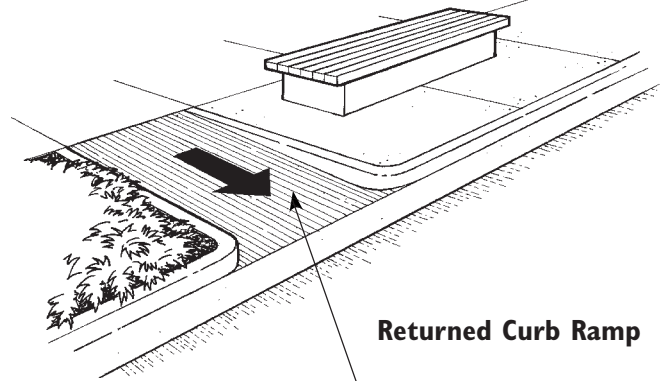
required textures  
on curb ramps,  
see ANSI 4.7.7

flared curb ramp  
allows people to  
walk safely across it

returned curb ramp  
needs protection so  
people will not trip on it



**Flared Curb Ramp**



**Returned Curb Ramp**

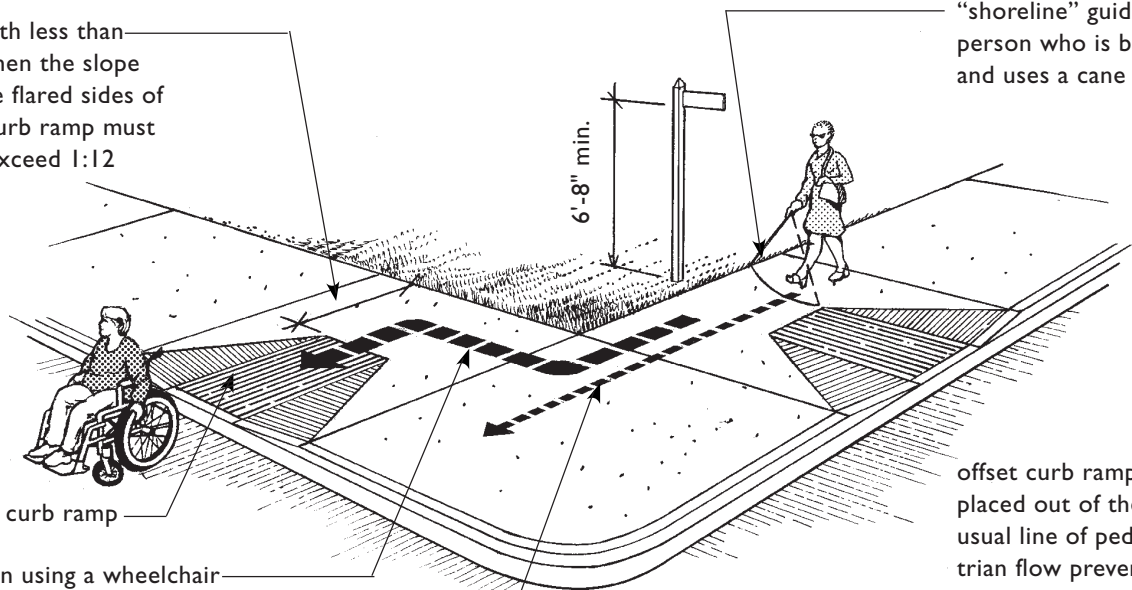
smooth transition  
with no lip or  
drop-off here

The "flared curb" ramp  
is safest and allows people  
to enter the ramp directly  
or from a side angle. This  
design is best used where  
pedestrians are likely to  
walk across the ramp.

The "returned curb" ramp  
has the curb "turned back"  
the full depth of the ramp.  
This design can be a tripping  
hazard to pedestrians and  
should be used only where  
adjacent plant beds or other  
features will prevent ap-  
proach from the sides.

required textures  
on curb ramps,  
see ANSI 4.7.7

if width less than  
48" then the slope  
of the flared sides of  
the curb ramp must  
not exceed 1:12



**Offset Curb Ramps**

flared curb ramp

person using a wheelchair  
must take short detour

path of a person with  
visual disability to the curb

"shoreline" guides  
person who is blind  
and uses a cane

offset curb ramp  
placed out of the  
usual line of pedes-  
trian flow prevents  
person with visual  
disability from walking  
out into road before  
realizing it

## Types of Curb Ramps

## RESIDENT ACCESSIBLE PARKING

**Minimum Number.** The Guidelines provide that a minimum of two percent of the parking spaces serving covered dwelling units be made accessible and be located on an accessible route. For example, if 100 units are covered, then a minimum of two accessible spaces is required.

$$100 \times 2\% = 2$$

If the development provides different types of parking, such as surface parking, garage, or covered spaces, at least one of each must be made accessible. Since many people with disabilities require more time to get in and out of vehicles, covered parking is especially important; therefore, where covered parking is provided, such covered parking must include at least one, and preferably more than one, accessible parking space. Accessible covered surface parking may be substituted for garage parking if the latter is not accessible. While the total number of spaces required to be accessible is only two percent, at least one space for each type of parking must be made accessible even if this number exceeds two percent.

Many state or local codes may require a greater percentage of accessible parking spaces for both residents and visitors. Builders/developers must follow the local or state code whenever it is stricter. Note also that accessible spaces benefit a wide range of users, residents and visitors with disabilities, residents carrying packages, families with strollers, movers, and delivery personnel.

**Requested Parking Spaces.** If buyers or renters request an accessible space at the time of first sale or rental, it may be necessary to provide additional

accessible parking spaces if the two percent are already reserved. These must be offered on the same terms and with the full range of choices offered other residents, i.e., surface, garage, or covered parking. If the spaces that make up the two percent count are not being used by residents with disabilities, such space(s) may be moved to a resident requested location near a building or unit entrance. These new parking spaces must be on an accessible route including curb ramps.

### Number of Accessible Parking Spaces

#### For Residents

- 2% of parking spaces serving covered dwelling units
- minimum of one at each site amenity

#### For Visitors, When Visitor Parking Is Provided

- a sufficient number of spaces to provide access to grade level entrances of covered multifamily dwellings
- minimum of one at sales/rental office

## PARKING AT PUBLIC AND COMMON USE FACILITIES

If parking spaces are available at a facility, such as a swimming pool, then at least one accessible parking space must be provided and be on an accessible route. A specific number or percentage of spaces is not defined in the Guidelines; however, to provide equitable use of facilities by people with disabilities, parking should be provided in accordance with the local code, or, at a minimum, at least one accessible parking space must be provided at each facility serving buildings containing covered dwelling units.

The Guidelines allow a vehicular route as an alternative to an accessible pedestrian route between dwellings and accessible public or common use site amenities when the site conditions are deemed extreme or where other physical barriers or legal restrictions prevent the installation of an accessible pedestrian route. See page 1.9 for additional discussion of “Use of Vehicles for Access to Site Amenities.” When use of a vehicle is the only means for a person with a mobility disability to reach a facility, it is recommended that more than one accessible parking space on an accessible route to the facility be provided. Since there is no accessible pedestrian route, it is important to provide ample parking at such public and common use facilities that may be accessed only via a vehicular route. If a person who uses a wheelchair must drive to a site facility, he or she should not be further inconvenienced and frustrated by finding the only accessible space already occupied.

### **VISITOR ACCESSIBLE PARKING**

If visitor parking is provided, accessible parking spaces for visitors also must be provided. The Guidelines do not specify a number or percentage of accessible visitor spaces, but provide that such parking must be “sufficient” to provide access to grade level entrances of covered multifamily dwellings. To allow people with disabilities to visit and have access to such entrances on an equitable basis, it is recommended that accessible visitor spaces be dispersed throughout the site, and that several spaces be provided at a building with large numbers of dwelling units.

### **IMPRACTICAL SITES**

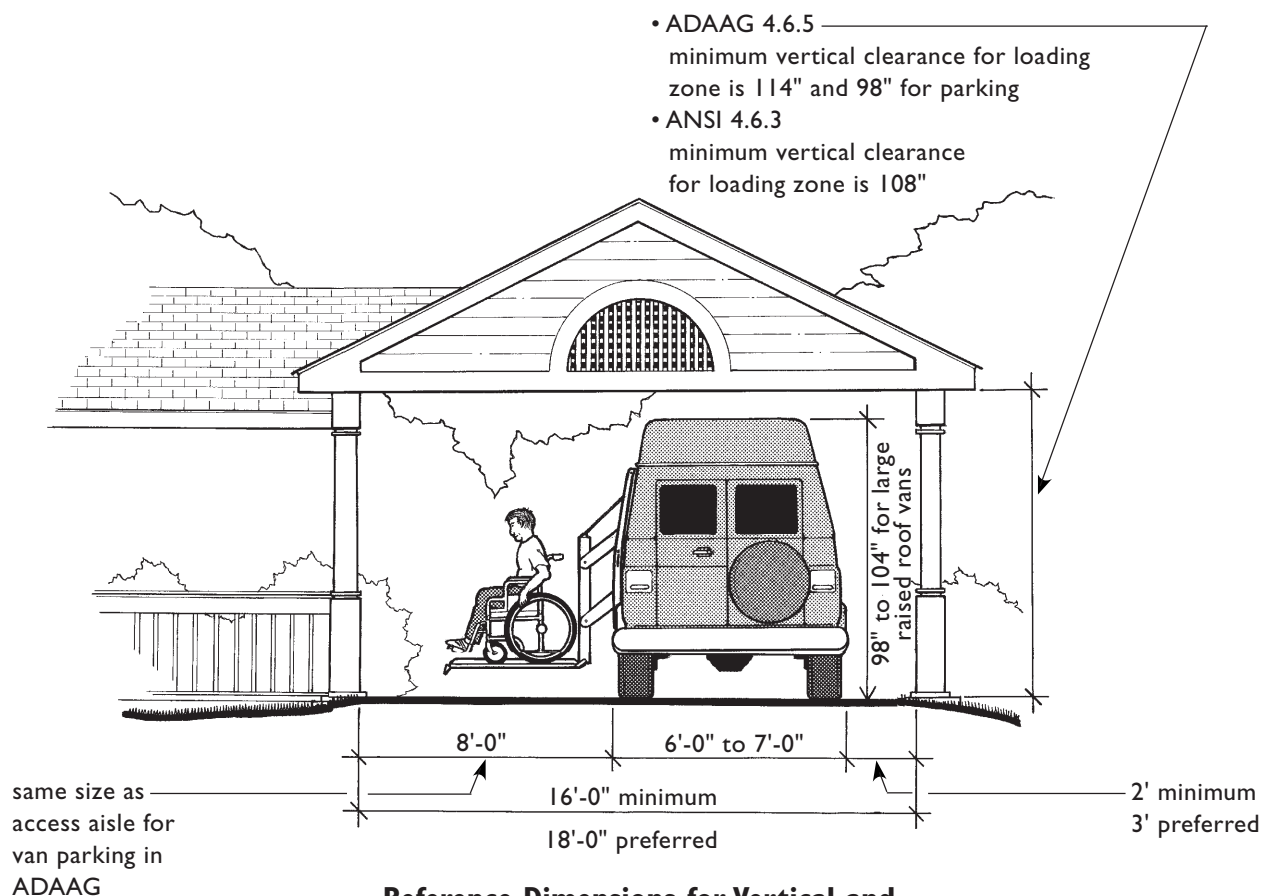
Where site conditions make it impractical to provide an accessible route from the designated general parking area to a building containing covered dwelling units, accessible parking spaces at a minimum of two percent of the covered dwelling units must be provided on an accessible route to the entrance. It is strongly recommended that every effort be made to provide this parking from an adjacent location. If visitor parking is provided, there also must be accessible parking spaces on an accessible route for use by visitors. See Chapter 1: “Accessible Building Entrance on an Accessible Route,” and the illustration on page 1.50 of that chapter.

## CLEARANCES FOR COVERED PARKING

If a project provides detached parking garages for assignment or rental to its tenants, it is considered public and common use parking. In the “Supplemental Questions and Answers,” item 14 (see Appendix), it is suggested that at least two percent of the garages should be at least 14'-2" wide and the passage door for the vehicle should be at least 10'-0" wide. The width of such garages would be adequate for cars, but to provide sufficient space for a van, it is recommended that the width be increased to between 16 and 18 feet. The door width of the garage could remain the same.

Neither the Guidelines nor ANSI give specifications for vertical clearance in parking

garages or at other sheltered parking to accommodate vans. However, ANSI does give specifications for vertical clearance of 108 inches at accessible passenger loading zones. The ADAAG specifies 98 inches of vertical clearance for van parking and 114 inches of vertical clearance at accessible passenger loading zones. The dimensions shown below are a compilation of available figures from commonly accepted accessibility standards that may be used to assist the building industry when planning to provide covered van parking. Such parking is not required by the Guidelines nor ANSI.



**Reference Dimensions for Vertical and Horizontal Clearances for Raised Roof Van with Lift Extended**

## LAUNDRY ROOMS

Where common use laundry rooms are provided, at least one of each type of appliance provided in each laundry area must be accessible and be on an accessible route, see ANSI 4.32.6. Such appliances include washing machines, dryers, soap dispensers, and any related features such as wash sinks, tables, and storage areas.

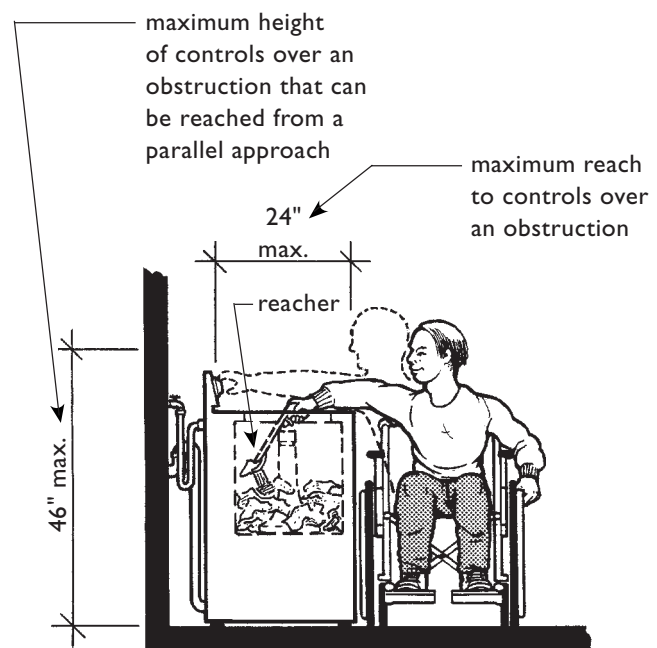
Where there are laundry rooms that serve each floor of an elevator building, each laundry room must be accessible. Likewise, where there is one laundry room on a ground floor in each building, each must be accessible. In the rare situation where there is a laundry room on the ground floor of a building and another located in the basement, it is acceptable to have only the ground floor laundry room accessible.

Front-loading washing machines are not required in common use laundry rooms if management, upon request, provides assistive devices (reachers) to enable a resident to use a top-loading washer. However, for people who use wheelchairs, front-loading washers generally are easier to reach into than top-loading machines.

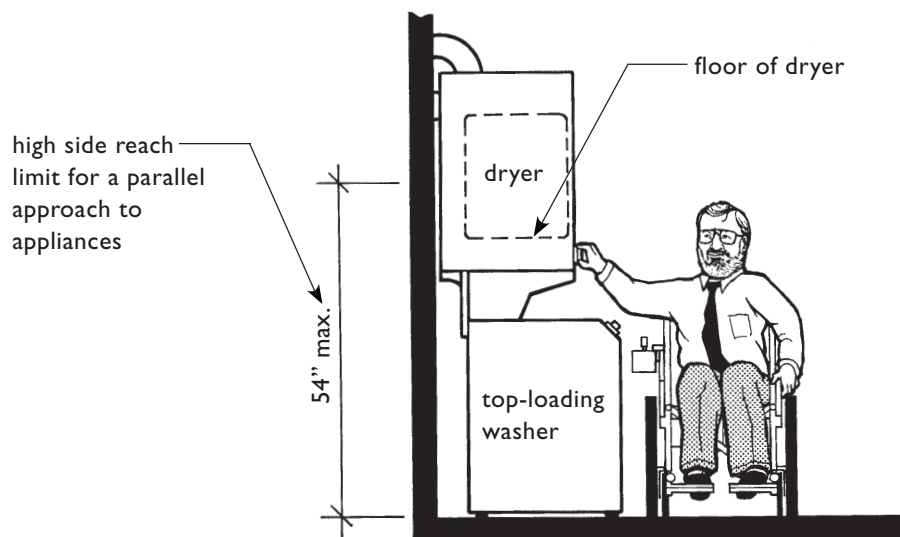
Top-loading machines with rear-mounted controls should not be installed on elevated pads that place the top of the cabinet and the controls beyond the reach range of a seated user. Dryers with either side-hinged or bottom-hinged doors may be installed in public and common use laundry rooms. Dryers with side-hinged doors usually are easier to reach into than those with bottom-hinged doors which, when open, obstruct floor space in front of the dryer.

The washer and dryer must have controls (including coin slots) within the reach range of a seated user. Since the Guidelines permit the installation of stacked washers and dryers, this same requirement for controls applies to at least one of these stacked units. Controls should be operable with one hand and not require tight grasping, pinching, or twisting of the wrist. If they can be operated with a closed fist they would work well for most users. See ANSI 4.25 Controls and Operating Mechanisms.

It is possible that management will be requested to provide, in addition to the grabbers, a knob turner that would allow someone with limited grasp to operate washer/dryer controls more easily. See Product Resource List in Appendix A, under “Assistive Devices” for manufacturers that carry knob turners in addition to reachers/grabbers.



**Use of Top-Loading Machine Made Possible With Assistance of a Mechanical Reacher**

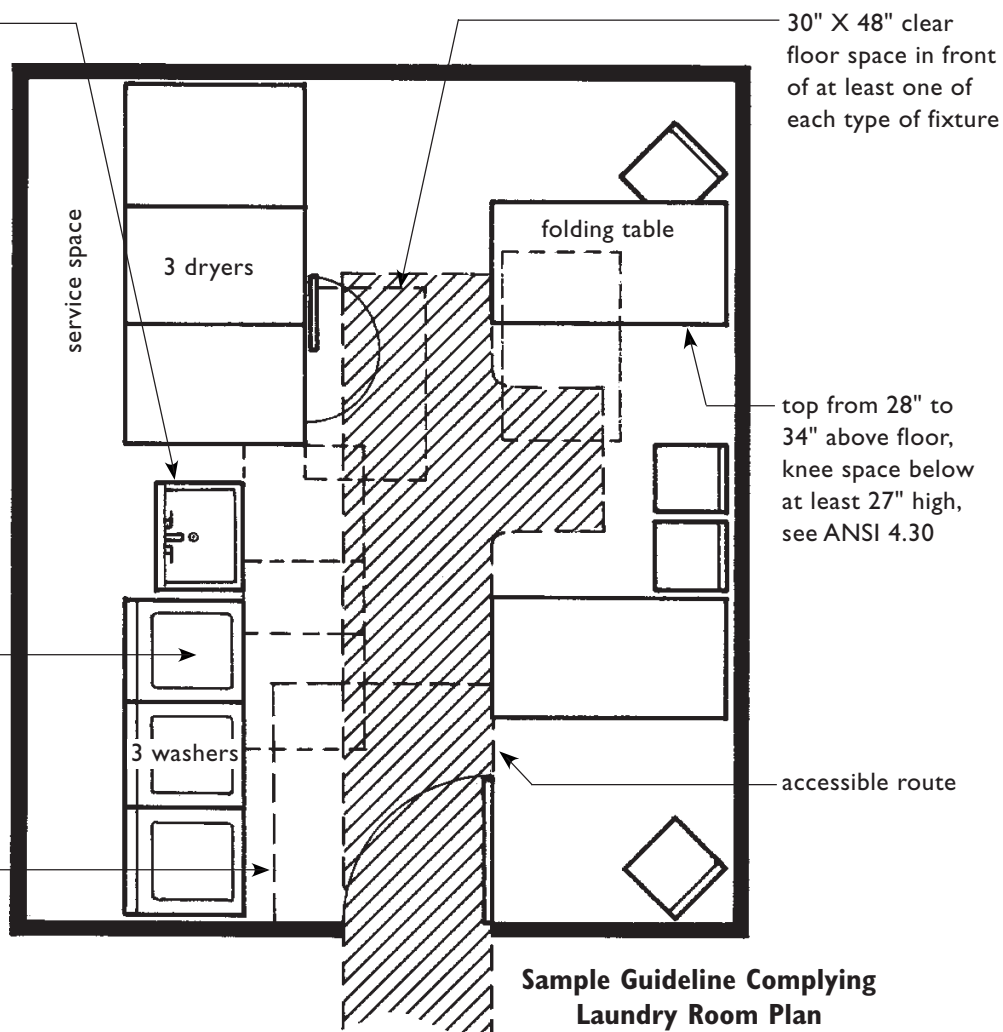


**Stacked Washer/Dryer Unit with Dryer and All Controls Within Reach Range of Seated User**

Utility sink must meet ANSI 4.19 with regard to faucet controls and height. Since deep sinks are usually provided in these locations, knee space is not possible as per ANSI 4.19; therefore, a 30" X 48" clear floor space parallel to the sink must be provided

top-loading washers permitted (see text, page 2.26)

maneuvering clearances at doors, see ANSI 4.13.6



**Sample Guideline Complying Laundry Room Plan**

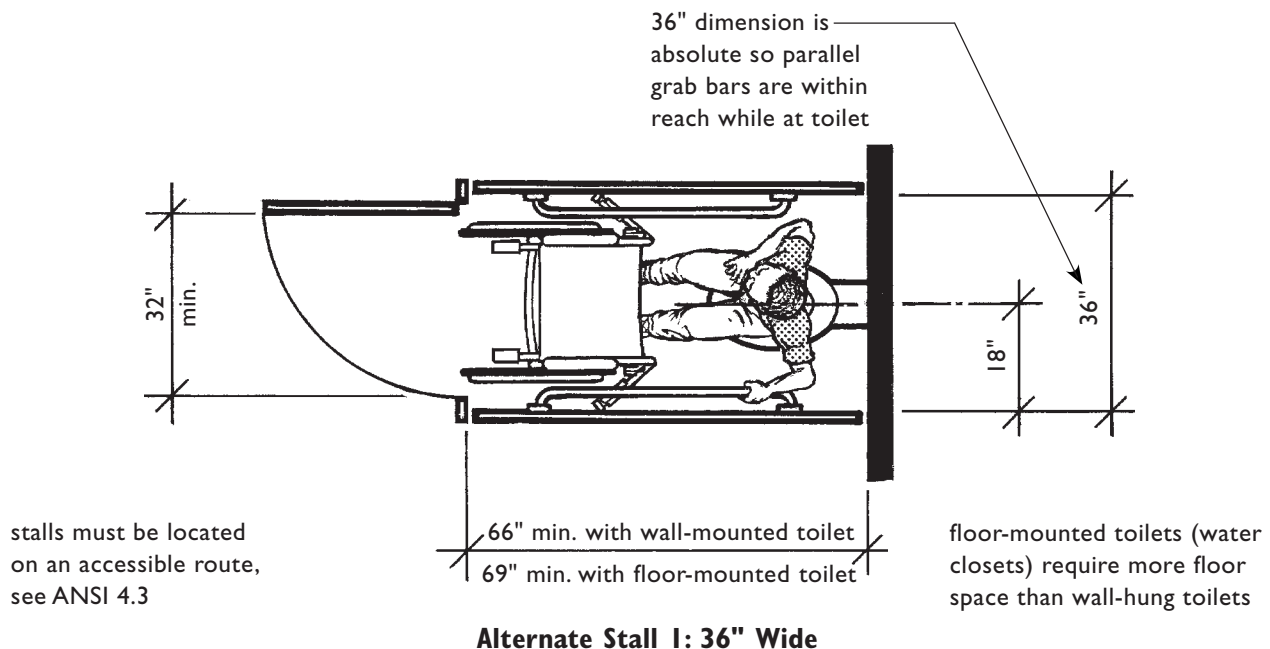
## TOILET ROOMS, BATHROOMS, BATHING FACILITIES, AND SHOWER ROOMS

The Guidelines require that all toilet rooms and bathing facilities in all public and common use facilities must be on an accessible route and at least one of each fixture type in each room or space must be accessible. The ANSI Standard addresses the types of fixtures and their mounting heights, the types of controls, and the amount of clear floor space required at accessible fixtures. These specifications, combined with clearances for doors and turning spaces for wheelchairs, determine the minimum toilet room requirements. See ANSI 4.22 Toilet Rooms, Bathrooms, Bathing Facilities, and Shower Rooms.

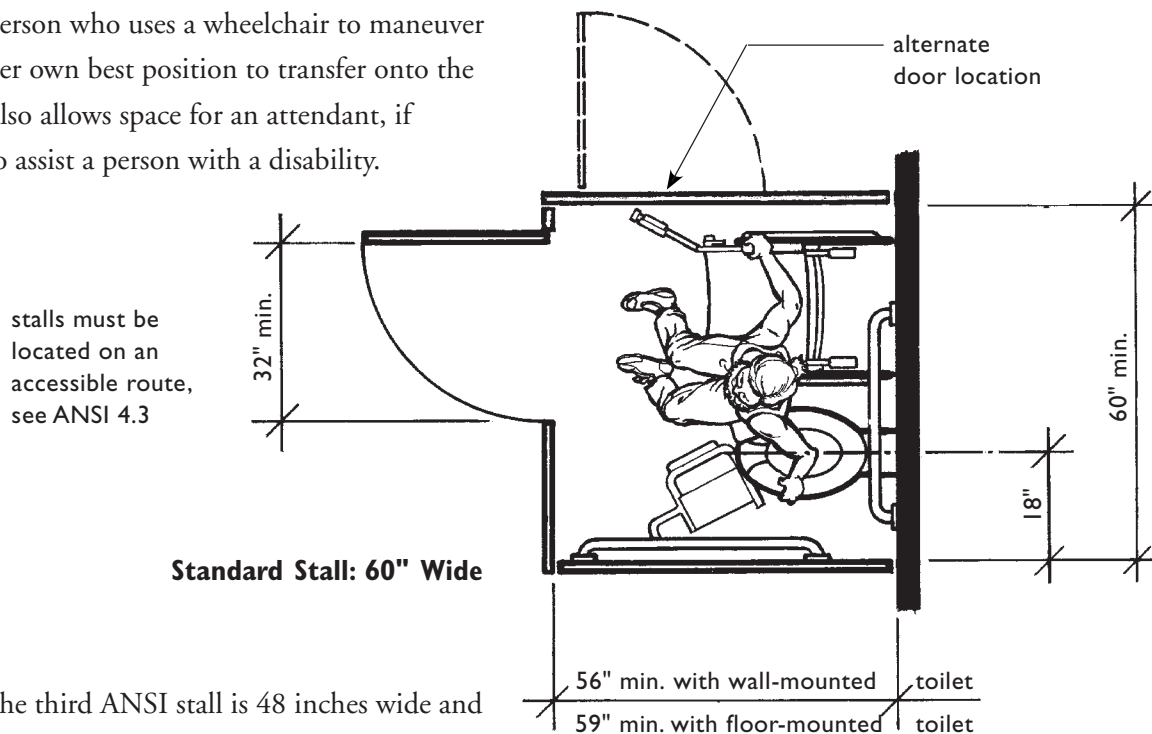
Toilet and bathing facilities that are required to be accessible include shower/dressing rooms located on the site for use of residents and their guests in addition to such spaces as common use public toilet rooms. Although neither the Guidelines nor the ANSI contain specifications for

shower/dressing rooms, such as those which may serve a swimming pool, the applicable sections of ANSI for similar components apply in these spaces and must be provided.

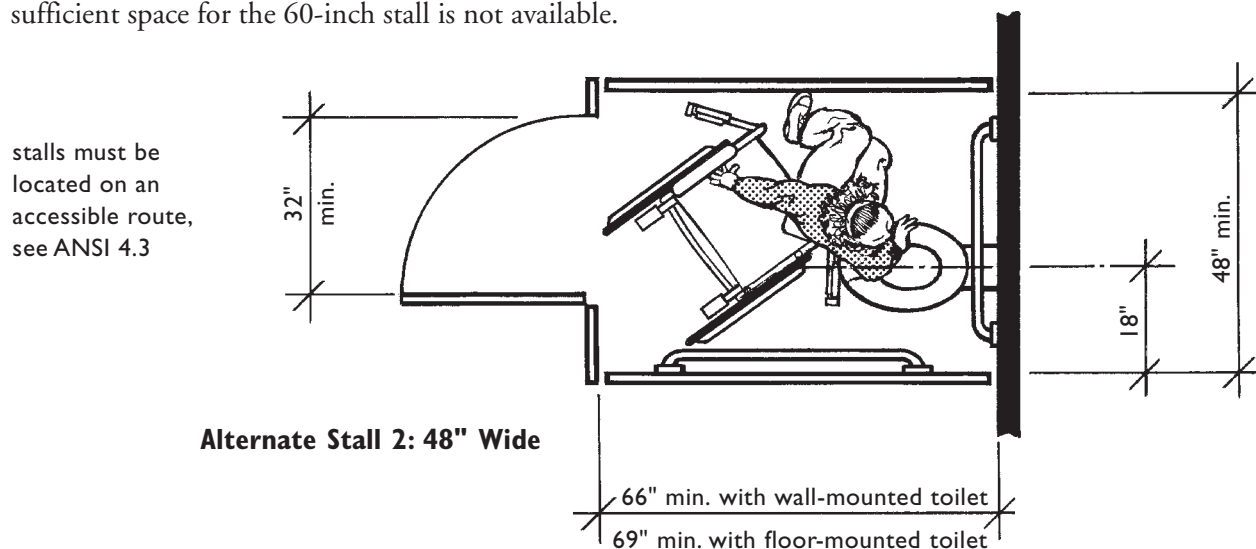
**Three Types of Toilet Stalls.** The ANSI Standard allows considerable flexibility in the size and layout of toilet rooms. There are three types of accessible toilet stalls for use by people with different disabilities. The narrow stall is 36 inches wide and varies in length, depending on whether it has a floor-mounted or wall-hung toilet fixture. This stall was originally intended for people who walk with difficulty, many of whom use crutches and braces and who need grab bars to steady themselves when sitting down and standing up. Such people generally have good upper body strength, a characteristic not always true of people who use wheelchairs. This 36-inch wide stall, although space efficient, does not work well for many people who use wheelchairs.



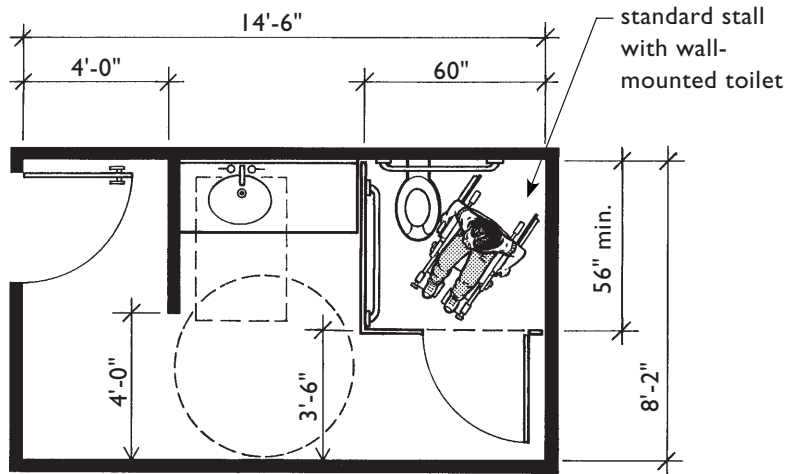
The 60-inch wide stall is a significant improvement over the narrow one because it accommodates most users. The extra floor space allows a person who uses a wheelchair to maneuver into his/her own best position to transfer onto the toilet. It also allows space for an attendant, if needed, to assist a person with a disability.



The third ANSI stall is 48 inches wide and is a compromise between the first two. This stall offers slightly more flexibility in the manner it is used by people with disabilities than the 36-inch wide stall. Since it cannot be used the same way as either of the others, it is limited in its usefulness. Often it is designed into renovation projects where sufficient space for the 60-inch stall is not available.

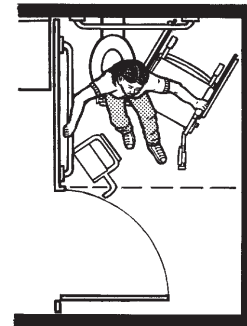


Sample plans of toilet rooms and shower/dressing rooms are presented to offer examples of how fixtures and elements can be combined into modest efficient spaces that comply with the ANSI.

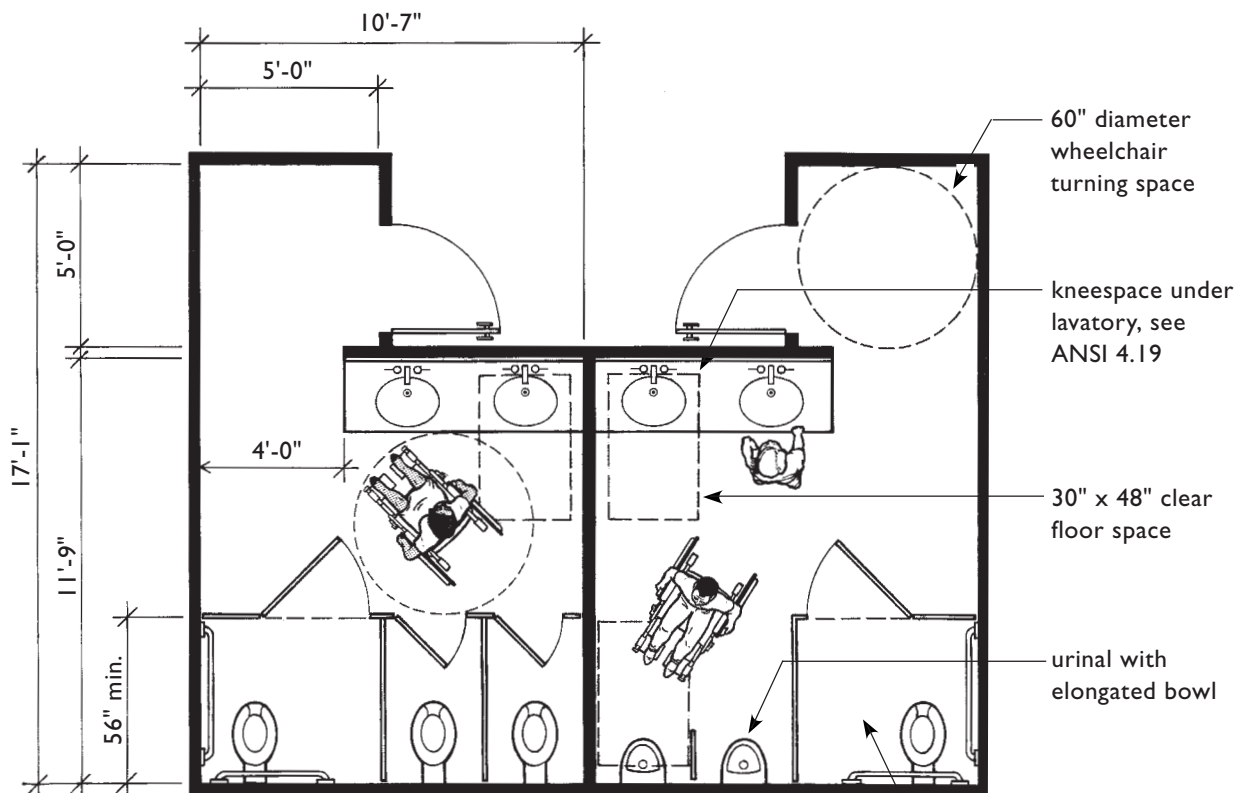


**Small Toilet Room with Single Standard Stall**  
Scale 3/16"=1'-0"

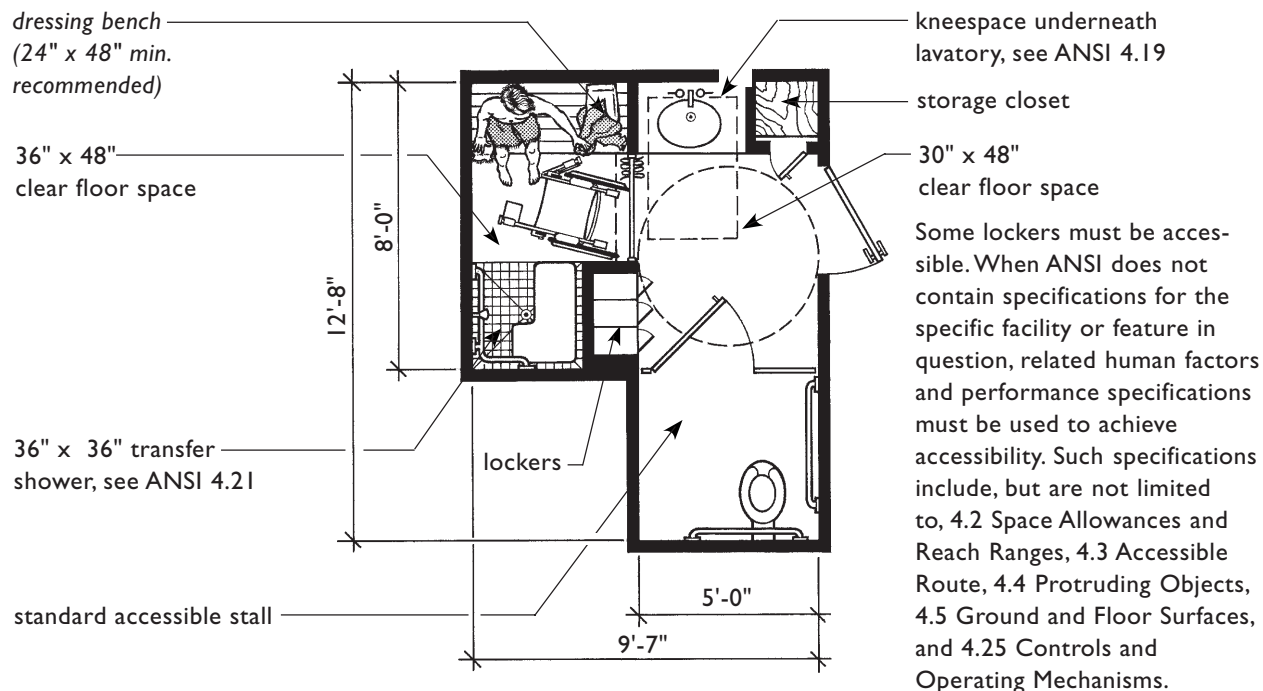
By repositioning the partition layout, additional space can be added to the toilet compartment to provide more maneuvering space without adding additional square footage to the room.



**Standard Alcove or "End of Row" Stall**  
Scale 3/16"=1'-0"

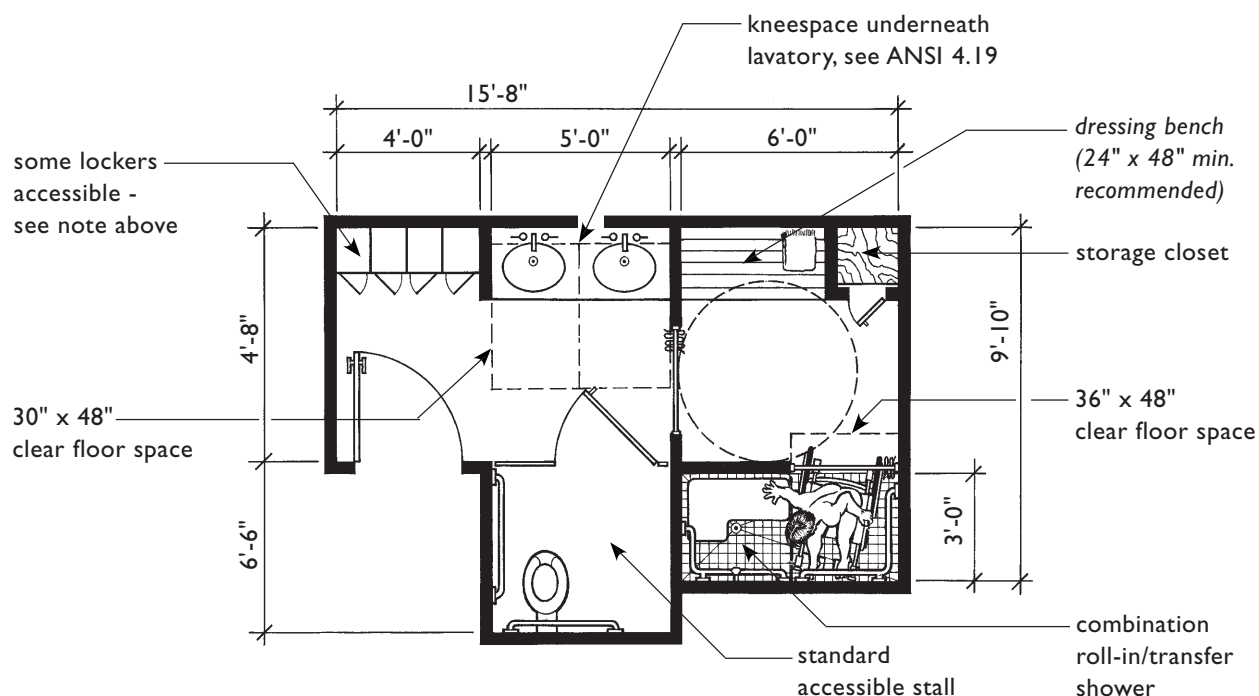


**Larger Public and Common Use Toilet Room**  
Scale 3/16"=1'-0"



**Small Toilet/Dressing Room  
with 36-Inch x 36-Inch Transfer Shower**

Scale 3/16"=1'-0"



**Small Toilet/Dressing Room  
with Combination Roll-in/Transfer Shower**

Scale 3/16"=1'-0"

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## Chapter Three:

### REQUIREMENT 3

#### Usable Doors

3

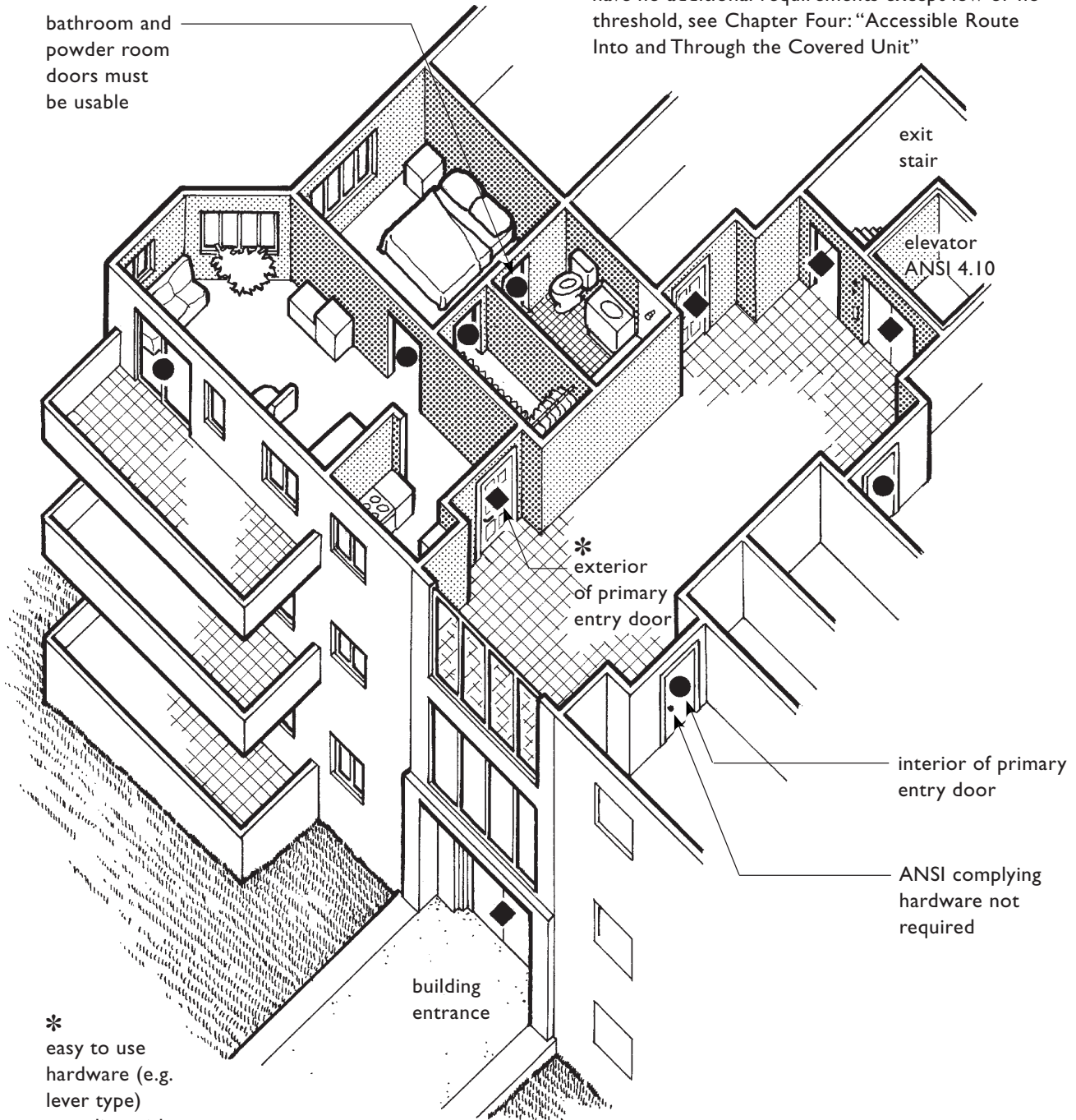


*...covered multifamily dwellings with a building entrance on an accessible route shall be designed in such a manner that all the doors designed to allow passage into and within all premises are sufficiently wide to allow passage by handicapped persons in wheelchairs.*

**Fair Housing Act Regulations, 24 CFR 100.205**

- ◆ **accessible doors** (in public and common use spaces and on public side of dwelling unit entry door)
  - must provide 32" minimum clear width
  - must meet ANSI 4.13 Doors

- **usable doors** (within interior of dwelling unit)
  - must provide 32" nominal clear width (see page 3.5)
  - have no additional requirements except low or no threshold, see Chapter Four: "Accessible Route Into and Through the Covered Unit"



\*  
easy to use  
hardware (e.g.  
lever type)  
complies with  
ANSI 4.13.9

**Accessible and Usable Doors  
in Buildings Containing Covered Dwelling Units**

## INTRODUCTION

The regulations for the Fair Housing Act state that **all** doors “designed to allow passage into and within all premises are sufficiently wide to allow passage by...persons in wheelchairs.” The Fair Housing Act Guidelines (the Guidelines) apply the requirements to doors that are part of an accessible route in public and common use areas of multi-family housing developments, as well as doors into and within covered dwelling units.

The Fair Housing Act and the Guidelines cover all doors designed to allow passage into and within all premises. However, doors in public and common use areas and primary entry doors of covered dwelling units must meet more stringent requirements for accessibility than doors that are located inside each dwelling unit. Therefore, to clarify this difference, this chapter refers to doors in public and common use areas and primary entry doors of covered dwelling units as **accessible doors**. Doors which are interior to the dwelling unit and which are subject to less stringent requirements for accessibility are referred to as **usable doors**.

**Accessible doors** must meet the ANSI 4.13 requirements for clear width, maneuvering clearances, thresholds, hardware, and opening force. Accessible doors are:

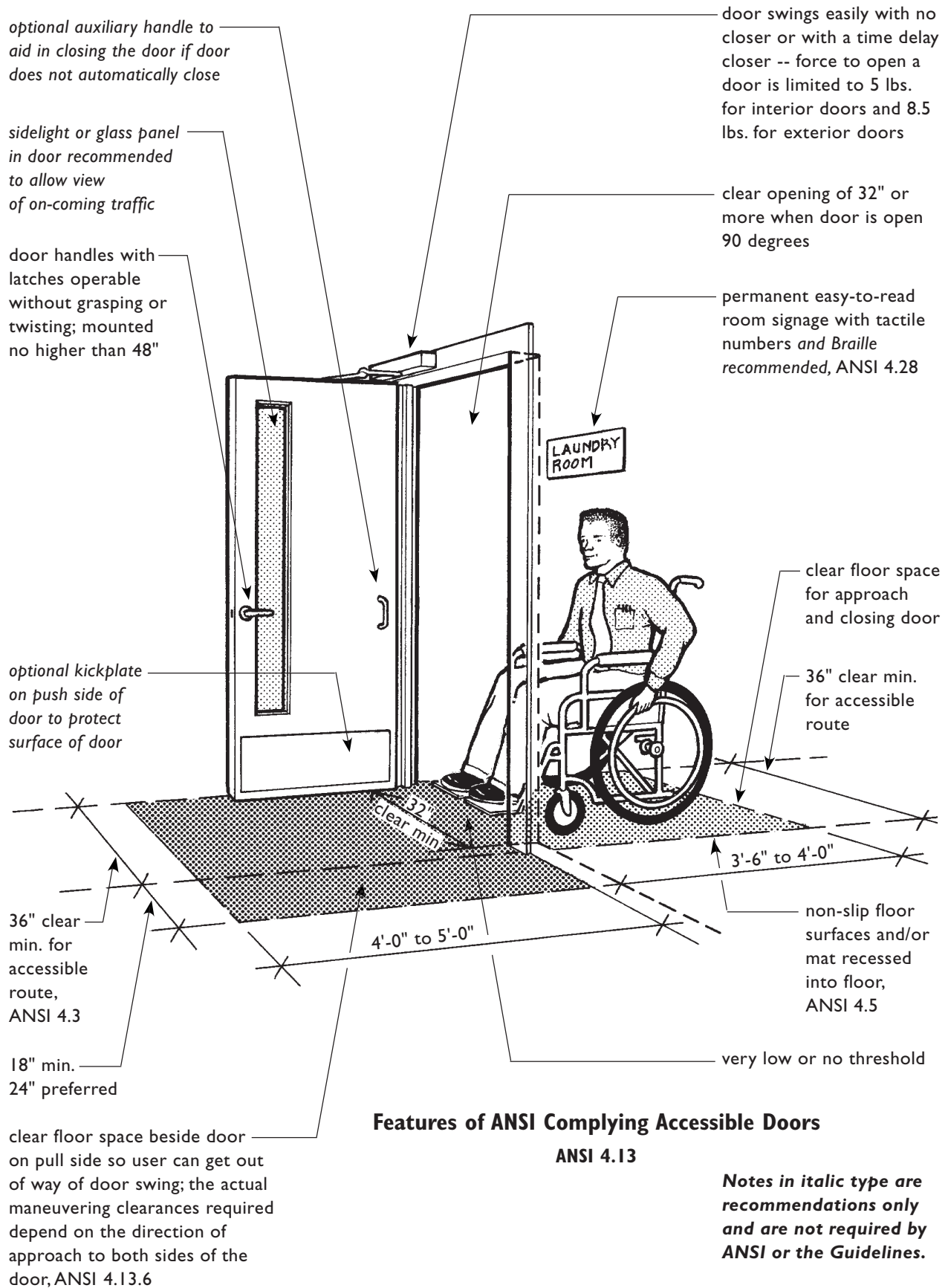
1. Doors that are part of an accessible route in public and common use spaces. They include, but are not limited to, doors residents use to enter buildings and doors into and within clubhouses, public restrooms, laundry rooms, and rental offices.
2. Primary entry doors to covered dwelling units – exterior side only. Entry doors may open from a

corridor or lobby or can be private individual entry doors accessed directly from the outside.

**Usable doors** are doors within the dwelling unit intended for user passage and must be usable in terms of clear opening width. Doors within the unit are not required to meet the ANSI 4.13 Doors requirements for maneuvering clearances, hardware, and opening force; but because an accessible route must be provided within the unit, thresholds must be low or nonexistent, see Chapter Four: “Accessible Route Into and Through the Covered Dwelling Unit.”

Usable doors include all secondary exterior doors at dwelling units that open onto private decks, balconies, and patios. Usable doors also include all passage doors within the covered dwelling unit, such as doors between rooms, doors into walk-in closets, and doors into utility/storage rooms or rooms that contain washers and dryers. Not covered are doors to small closets such as linen closets which typically have shelves within easy reach. Also not covered are access doors to small mechanical closets dedicated specifically to furnaces or hot water heaters.

In addition, the Guidelines also require that usable doors be provided to areas of the dwelling that may not be accessible at the completion of construction, such as an unfinished basement or a garage attached to a single-story dwelling unit (in the latter case, another door is used for the accessible entrance). Usable doors at these locations will allow people with mobility impairments to modify their unit later to provide accessibility to these areas, such as installing a ramp from the dwelling unit into the garage. Usable doors also are important for people with walkers or crutches so they may have improved access to such areas.



## DOORWAY WIDTH AND DEPTH

### DOORWAY CLEAR OPENING

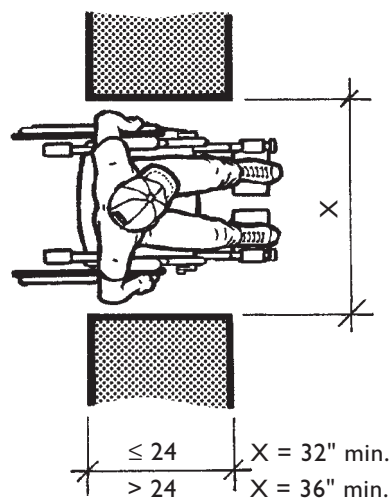
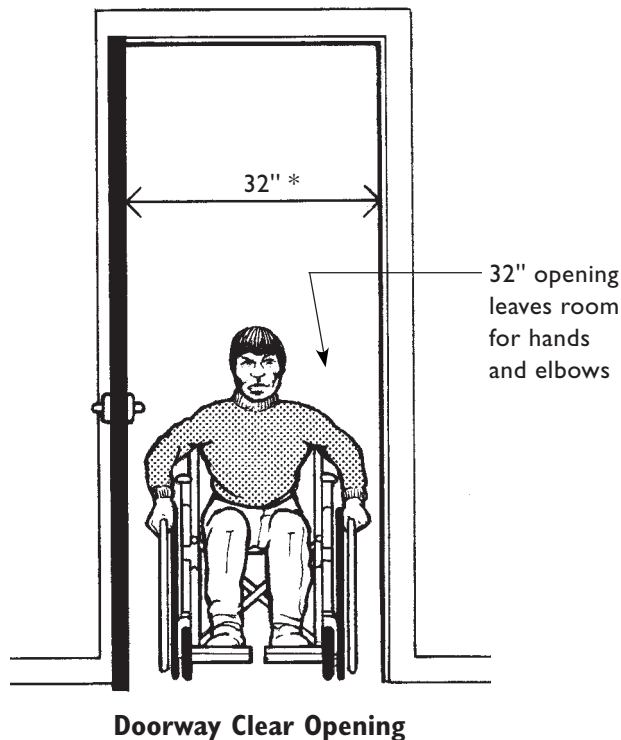
The commonly used hinged, folding, or sliding doors installed in the standard manner provide a passage width that is reduced by both the door standing in the doorway and door stops, if present. Thus, the available passage width is less than the size of the door.

**Accessible doors** in public and common use spaces and primary entry doors of dwelling units must provide a clear opening of **32 inches minimum**. This means the clear opening must not be less than 32 inches, but it may be more. The Guidelines allow **usable doors** (secondary exterior doors and doors that allow passage within the dwelling unit) to be a **nominal 32 inches** clear width. Usable doors are intended to provide 32 inches of clear width. But because of normal installation practices, adjacent conditions, variation in products such as hinges, and thicknesses of available materials, the doorway may vary from the 32-inch clear width by a nominal or small amount. Tolerances of 1/4 inch to 3/8 inch are considered an acceptable range for usable doors. This tolerance does not apply to accessible doors.

### DOORWAY DEPTH

In both public and common use spaces and within dwelling units, the wall thickness of all cased openings must be no greater than 24 inches if the width of the doorway or passage is the minimum 32 inches. Doorways with a depth greater than 24 inches must be widened to provide the 36-inch minimum clear width for an accessible route.

- \* • 32" clear minimum for accessible doors
- 32" nominal clear width for usable doors



**Doorway Depth**

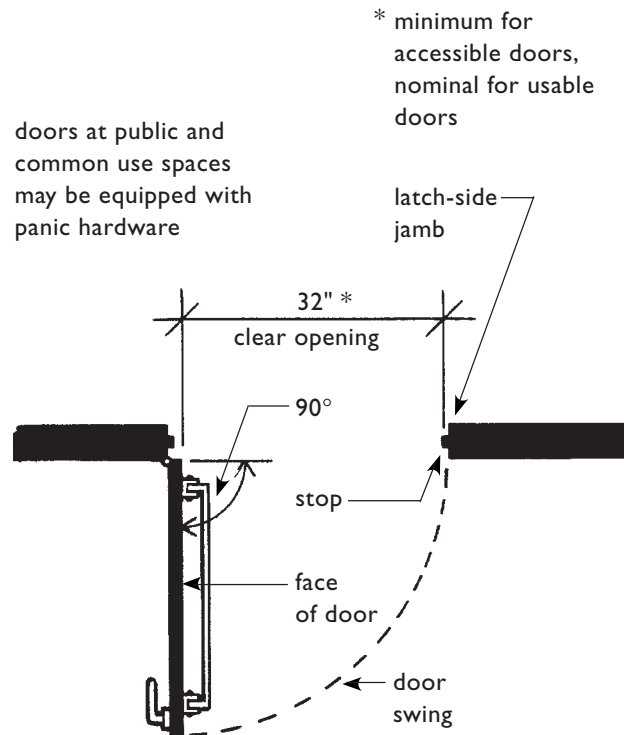
## TYPES OF DOORS

### HINGED DOORS, SINGLE-LEAF

At hinged doors the 32-inch opening is measured from the stop on the latch side jamb to the face of the door when standing in a 90-degree open position. Because the door, when open, remains in the doorway, the size of door used for the main entry door must be wide enough so that when open 90 degrees, it provides 32 inches minimum clear width. Main entry doors to dwelling units may be thicker than doors used within the unit, often making it necessary to install a door wider than 34 inches at the main entry. (In addition, most building codes require a 36-inch door at the main entry.) Within the dwelling unit, a 34-inch wide door, hung in the standard manner, is considered a usable door because it provides an “acceptable” nominal 32-inch clear opening of at least 31-5/8 inches clear.

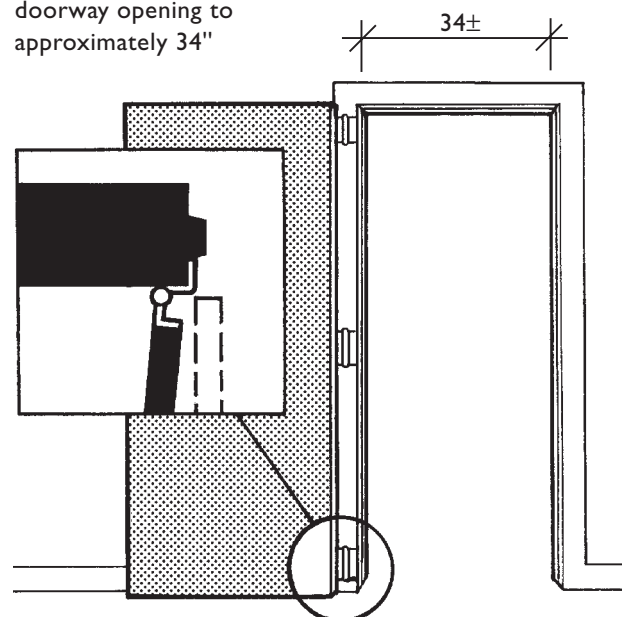
Accessible hinged doors in public and common use spaces may be equipped with push bar or panic type hardware even though the bar may protrude into the 32-inch clear width. The hardware should be mounted high enough (approximately 36 inches minimum above the floor) to allow sufficient room for people pushing themselves in manual wheelchairs to get through the doorway without catching their arms, shoulders, or clothing on the panic hardware. In no case may the bar extend more than 4 inches from the door because it then becomes a hazardous protruding object, see ANSI 4.4 Protruding Objects.

In the interior of dwelling units it is possible for residents or landlords to adapt the nominal 32-inch clear opening to create a wider and more usable doorway by installing offset or swing-clear hinges, by removing the lower portion



Measuring Clear Width at Hinged Doors

installation of swing-clear hinges is a modification that increases a 32\" doorway opening to approximately 34\"



Use of Swing-Clear Hinges

of the door stop, or by doing both. With standard hinges, a door, when open, remains in the door opening; swing-clear hinges allow a door to swing completely out of the doorway and increase the clear opening of the doorway. See Product Resource List, Appendix A, for manufacturers of swing-clear hinges. Builders are cautioned that they may not install a 32-inch wide door (which effectively yields a 30 to 30-1/2 inch opening) and expect residents to make modifications later to bring the door up to the 32-inch nominal width required at the time of initial construction.

### HINGED DOORS, DOUBLE-LEAF

Two narrow, double-leaf doors (two hinged doors) mounted in a single frame may be slightly more difficult to open and close than a single door. Double-leaf doors can be a useful choice where space for the door swing is limited and where doors are likely to stand open. If narrow double-leaf doors are used, the nominal 32-inch clear opening must be maintained between door faces when in a 90-degree open position. Where larger double-leaf doors are installed, and if only one leaf is active, that leaf must be usable, i.e., provide the nominal 32-inch clear opening.

### POCKET, SLIDING, AND FOLDING DOORS

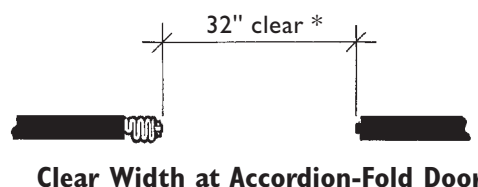
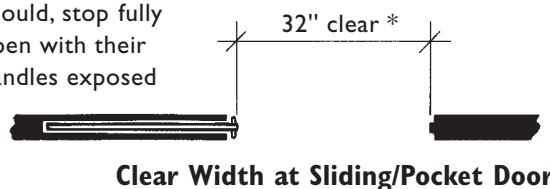
Pocket, sliding (e.g., automatic sliding doors at a main entrance), and folding doors may be installed in public and common use areas and at those times must meet the technical requirements of ANSI 4.13 Doors. The following discussion will focus on this category of doors when installed within dwelling units.

Unlike hinged doors, pocket, sliding, and folding doors, encroach little or not at all upon

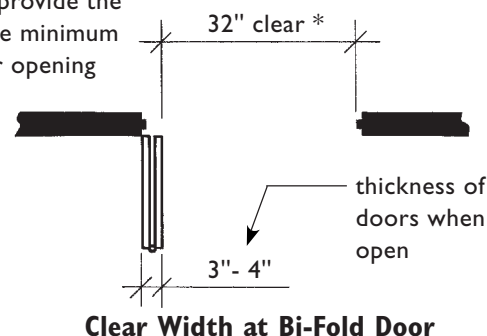
clear floor space and may, therefore, be an advantage when planning small rooms. This category of doors has additional features pertaining to the amount of space the door occupies within the doorway and the type of hardware installed. Hardware on interior dwelling unit doors is not covered by the Guidelines; however, recommendations are made to increase ease of use of the hardware, and thus the door.

accessible sliding doors must, and usable sliding doors should, stop fully open with their handles exposed

\*minimum for accessible doors, nominal for usable doors



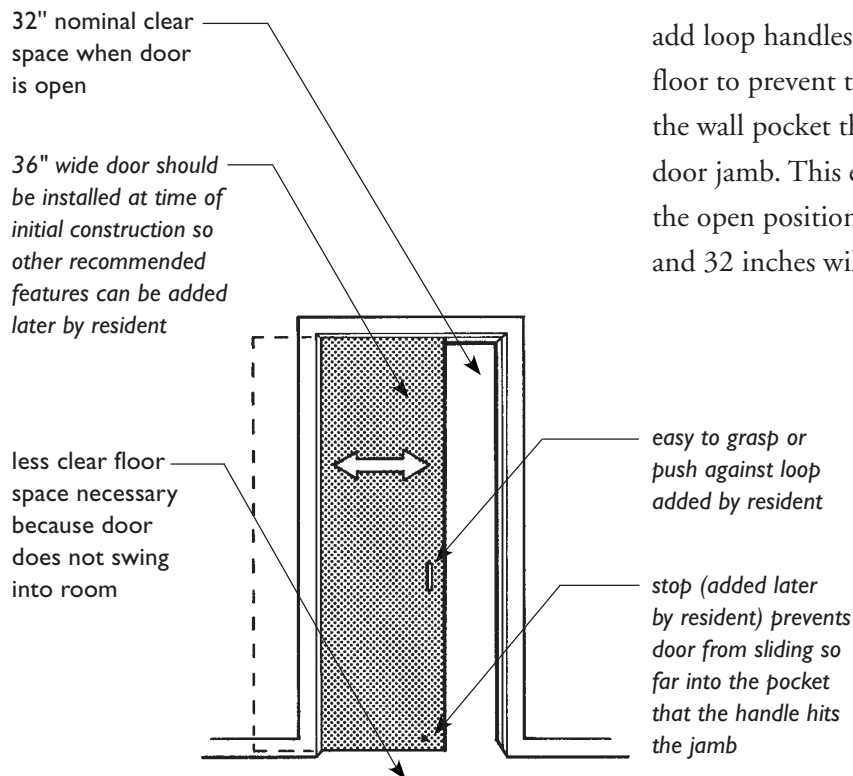
a 3'-0" door is the narrowest bi-fold door that can be installed and still provide the accessible minimum 32" clear opening



**Pocket Doors.** The traditional handle and latch installed in pocket doors are difficult for many people to operate because the hardware is recessed into the face of the door so the door can slide completely into the wall pocket. If carefully monitored, it may be possible to install a 32-inch wide pocket door that yields a nominal 32-inch clear opening; however, without modifying the door hardware, the door is still difficult to open and close.

Lacking complete control of variables such as the specific manufacturer's design of the door track assembly, the builder's installation method, the decision to install door stops (which vary in thickness), and other field conditions, it is recommended that pocket doors wider than 32 inches be installed. If a 36-inch wide door is installed, residents may make the following simple modifications later so the door is easier to operate: add loop handles on the door and a stop at the floor to prevent the door from sliding so far into the wall pocket that the handle is tight against the door jamb. This ensures that when the door is in the open position the handle will remain exposed and 32 inches will remain clear for passage.

*Notes in italic type are recommendations only and are not required by ANSI or the Guidelines.*

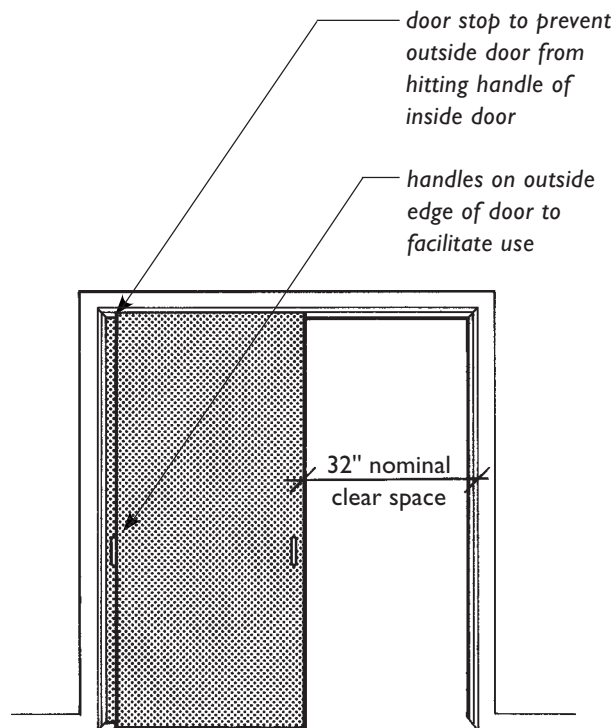


**Usable Sliding/Pocket Door**

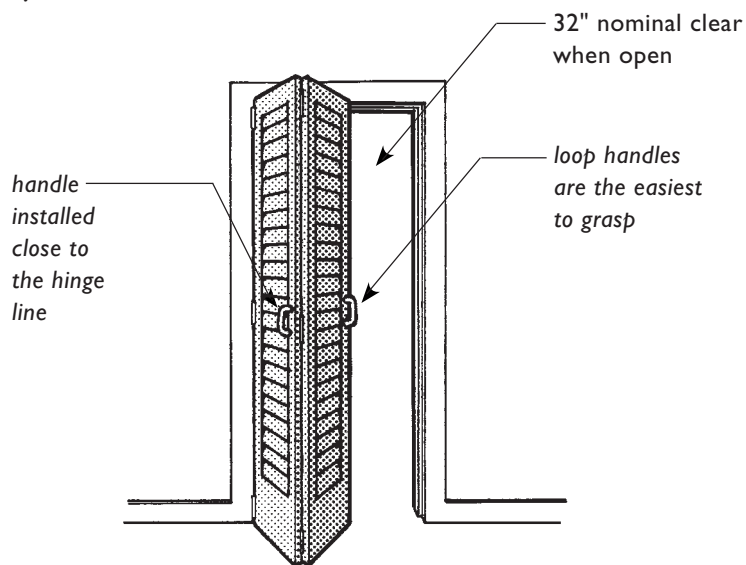
**Sliding Doors.** Interior sliding doors are generally used as closet doors since they avoid problems caused by door swings. If installed, each panel or door must provide a nominal clear opening of at least 32 inches. It is recommended that loop handles be installed rather than the more common recessed finger cups. Exterior sliding doors are discussed on page 3.10.

**Folding Doors.** Folding doors typically found in dwelling units are either accordion or bi-fold. They are made up of two or more attached or hinged panels that fold together when opened. When either type of door is in the open position, the clear opening is reduced by the thickness of the folded door. Considering this, the smallest doorway in which either a bi-fold assembly or accordion type door assembly can be installed is 36 inches.

To improve the ease of use of bi-folding doors, loop handles can be installed in the recommended locations as shown in the adjacent drawing. Magnet catches and latches on accordion-folding doors often are difficult to line up with the receiving end of the catch for people with any hand or grasp limitation.



**Usable Sliding Door**



**Usable Folding Door**

*Notes in italic type are recommendations only and are not required by ANSI or the Guidelines.*

## DWELLING UNIT DOORS

### PRIMARY ENTRY DOOR

The exterior of the primary entry door of covered dwelling units is part of public and common use spaces, therefore, it must be on an accessible route and be accessible, i.e., meet the ANSI requirements of 4.13 Doors. This is true both of entry doors opening off interior corridors internal to a building containing multiple dwelling units, and of separate exterior ground floor dwelling unit entrances.

Because primary entry doors to covered units must be on an accessible route, thresholds at these doors must be no higher than 3/4 inch and must be beveled with a slope no greater than 1:2. See additional discussion of thresholds and accessible route at dwelling units on page 4.12.

### SECONDARY EXTERIOR DOORS

All secondary exterior doors from the same or different rooms that provide passage onto exterior decks, patios, or balconies must be usable. For example, if a deck is served by French doors or other double-leaf doors, and if only one leaf is active, that leaf must be usable, i.e., provide a nominal 32-inch clear opening. If both leaves are active, one leaf would not have to provide a nominal 32-inch clear opening as long as both leaves, when open, do provide the nominal 32-inch clear opening.

Since an accessible route must be provided throughout the unit, thresholds at secondary exterior doors also are limited to a maximum height of 3/4 inch. However, secondary doors that exit onto exterior decks, patios, or balcony surfaces are allowed to have a 4-inch maximum step (or more if required by local building code) to prevent

water infiltration at door sills only if the exterior surface is constructed of an impervious material such as concrete, brick, or flagstone. If the exterior surface is a pervious material such as a wood deck that will drain adequately, the decking must be maintained to within 1/2 inch of the interior floor level. See Chapter Four: “Accessible Route Into and Through the Covered Dwelling Unit.”

Sliding glass doors are often installed as secondary exterior doors. The Guidelines state that “the nominal 32-inch clear opening provided by a standard 6-foot sliding patio door assembly is acceptable.” Unfortunately, many of the standard 6-foot sliding glass door assemblies yield only a 28-1/2-inch maximum clear opening in the full open position. Note: 28-1/2 inches is not an acceptable 32-inch nominal dimension. Builders and product specifiers must carefully select door assemblies that yield the 32-inch nominal clear opening (a clear opening from 31-5/8 to 32 inches or more). Some economy suppliers have 6-foot sliding glass doors that will meet the required width. Other assemblies on the market larger than 6 feet also provide the required width. See Product Resource List, Appendix A.

*good general illumination*

*color contrast between door and frame*

*door closer with safe sweep period, ANSI 4.13.10*

*low force to open door, ANSI 4.13.11*

*clear width of open doorway min. 32", ANSI 4.13.5*

*clear, readable, high contrast signage*

*lever or other easy to use door hardware, ANSI 4.13.9*

*low or no threshold, see Chapter 4*

*maneuvering space on exterior side of door next to latch varies depending upon direction of approach to door, ANSI 4.13.6*

*outside landing 0" to 1/2" below interior floor level depending upon construction of porch or landing surface, see Chapter 4*

*adequate slope to prevent ice build-up*

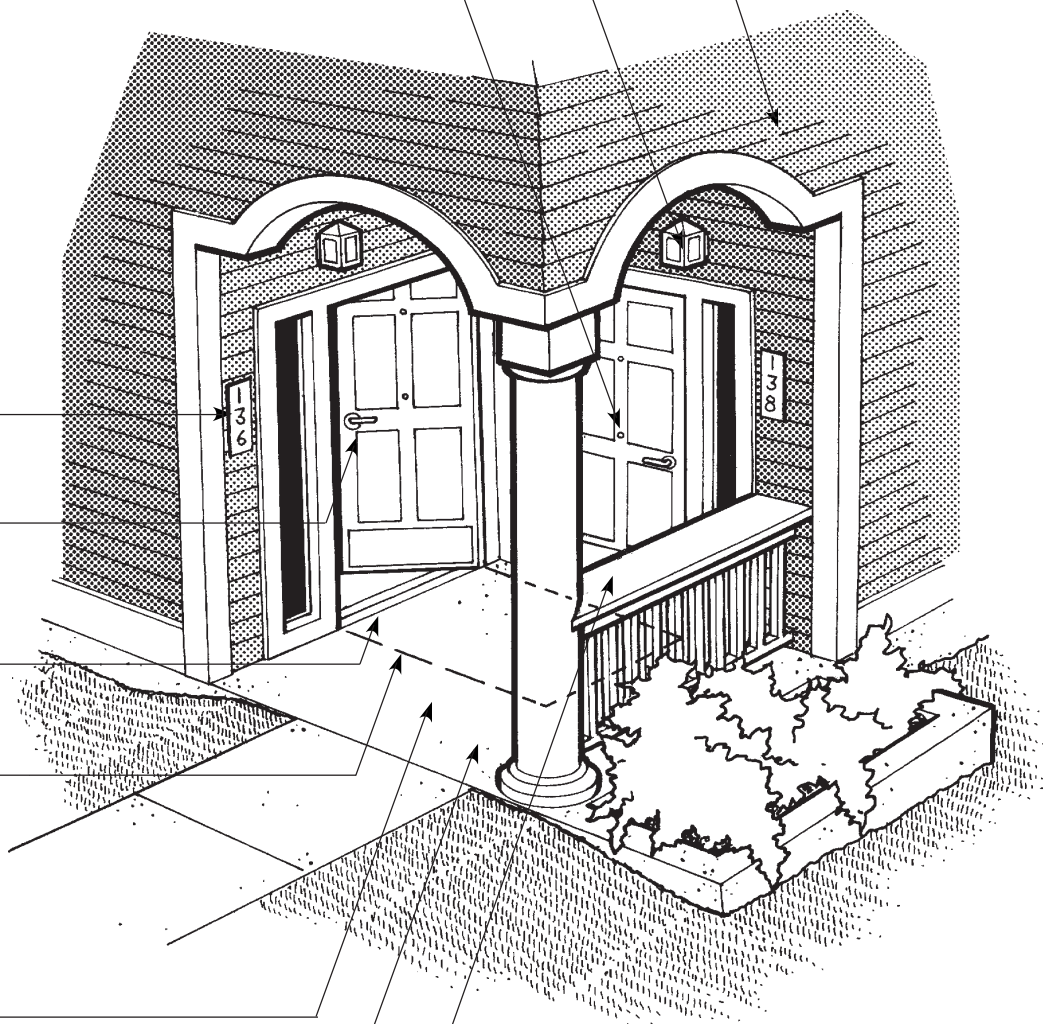
*package shelf*

*high intensity lighting focused at locks for people with low vision*

*view window (or wide angle peep hole)*

*lighted doorbell buttons*

*weather protection*

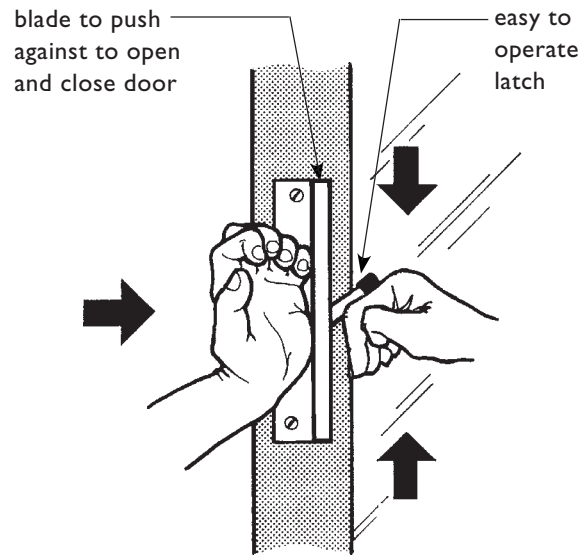


**Accessible Primary Entry Door  
at Covered Dwelling Unit**  
See ANSI 4.13 Doors

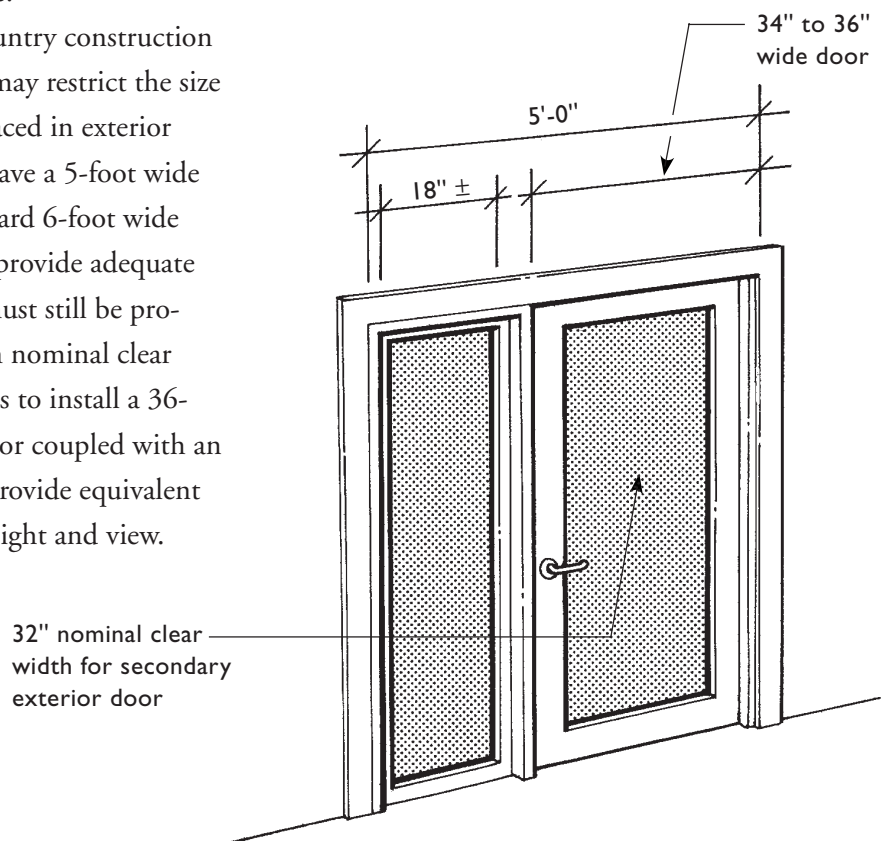
*Notes in italic type are recommendations only and are not required by ANSI or the Guidelines. All recommended features are helpful to people with and without disabilities.*

Where sliding glass doors are used, it also may be necessary to modify the threshold either by sinking the frame into the floor, or by adding a beveled edge. See Chapter Four: “Accessible Route into and Through the Covered Unit” for additional discussion of thresholds along accessible routes. Locks and latches on sliding glass doors are often difficult to operate for someone with any hand limitation. Although not required by the Guidelines, but because sliding glass door hardware is more difficult to modify at a later time if needed than hardware on hinged doors, it is recommended that locks be installed that can be raised and lowered with a closed fist or that require no finger manipulation. When sliding glass doors are being selected, doors with loop handles or large blades to push or pull against are the easiest to use.

In some parts of the country construction or building code requirements may restrict the size of window or door openings placed in exterior walls. Where it is necessary to have a 5-foot wide maximum opening or if a standard 6-foot wide sliding door assembly does not provide adequate passage width, a passage door must still be provided that will yield the 32-inch nominal clear width. One suggested solution is to install a 36-inch wide full glass swinging door coupled with an appropriate width sidelight to provide equivalent or similar glass area for natural light and view.

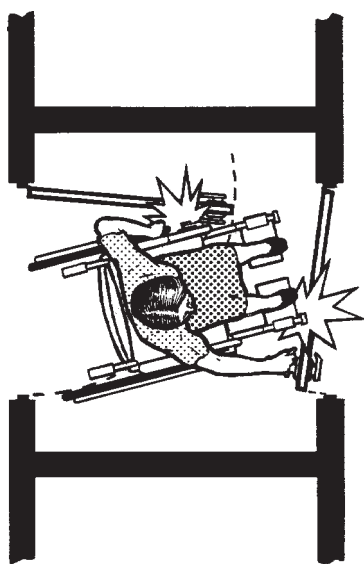


**Sliding Glass Door Hardware that Requires No Twisting, Turning, or Fine Finger Manipulation to Operate Recommended**



**Substitution of a 36" Hinged Door Plus Sidelight When a 5' or 6' Sliding Door Assembly Cannot Provide a 32" Door Opening**

after maneuvering to get around the first door, the user cannot open the second door and is trapped



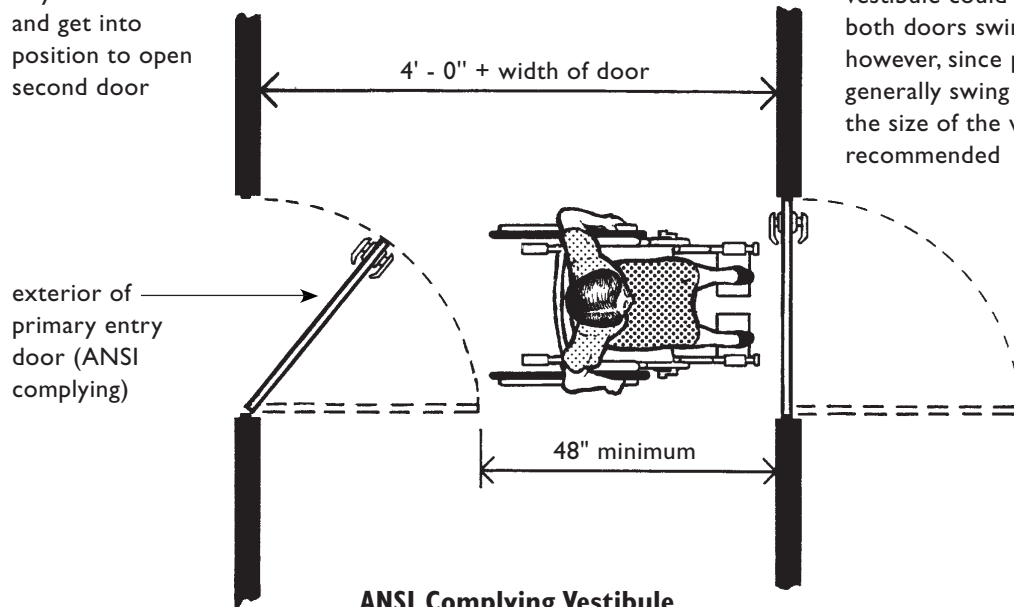
**Inadequate Space in Vestibule**

## **DOORS IN SERIES OR DOUBLE DOOR VESTIBULE**

Doors in a series are not typically part of an individual dwelling unit but are used at entrances to buildings. As such they are part of public and common use spaces and subject to the design specifications found in ANSI 4.13 Doors. However, where doors in a series are provided as part of a dwelling unit (to form an air lock when extremes of climate exist or to create a privacy vestibule), the requirements of an accessible route into and through the dwelling unit would apply.

If a vestibule is too small, people using mobility aids may get trapped and not be able to open the second door and exit the vestibule. For this reason, even though doors on the interior of the unit only must be usable (or have a 32-inch nominal clear width) the distance between the doors must be sufficient to allow users to maneuver to get the second door open and pass through. This is especially critical for safe egress in emergency situations. Guidance can be found at ANSI 4.13.7.

user is able to maneuver out of way of first door and get into position to open second door



**ANSI Complying Vestibule**

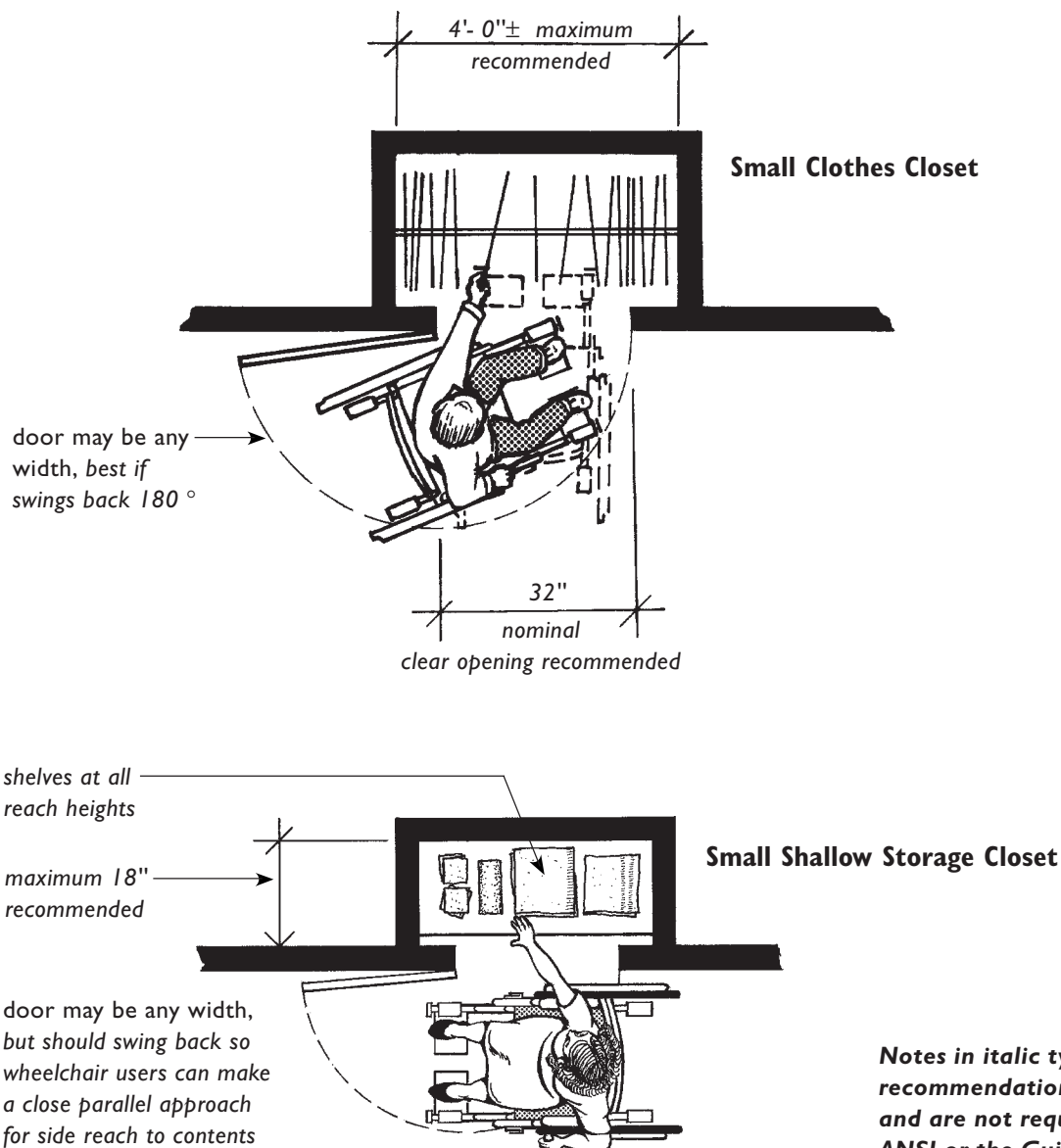
## CLOSET DOORS

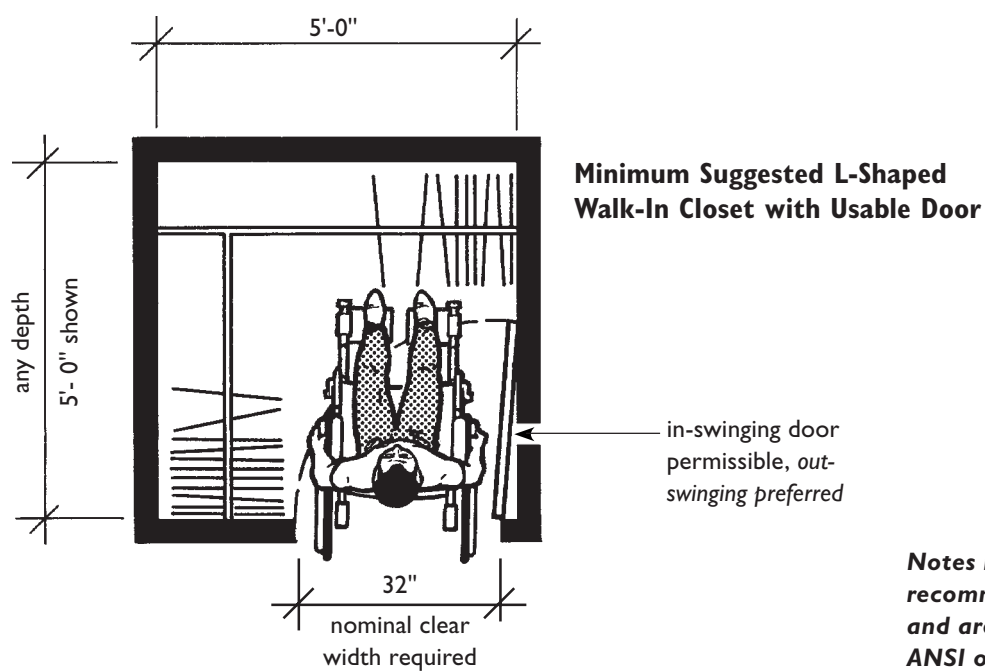
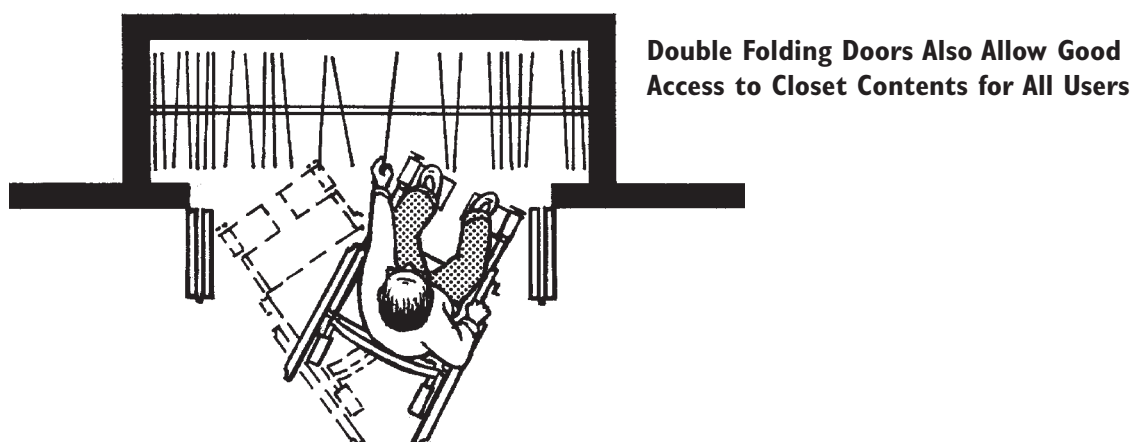
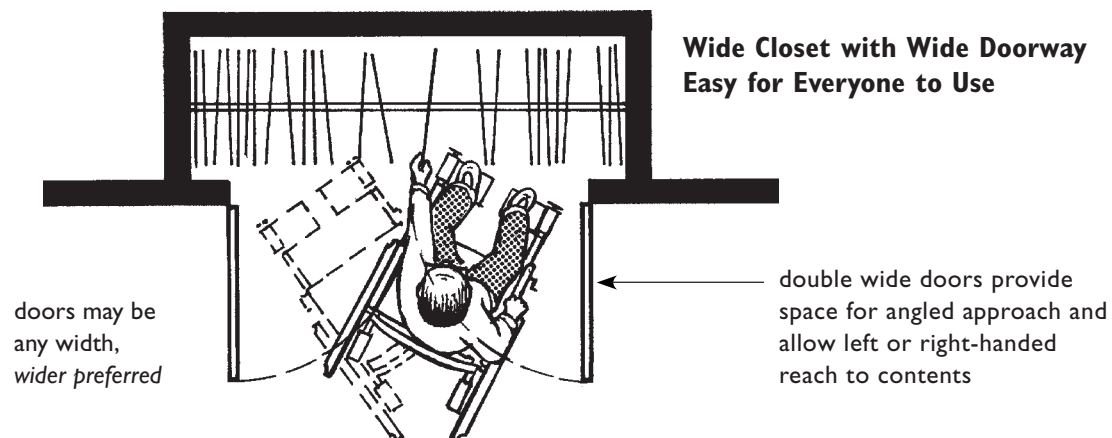
Closets that require users to pass through the doorway to reach the contents must have doors that provide at least 32 inches nominal clear opening. Closets that permit the user to access the contents from outside the closet have no door width specifications whatsoever.

Closets for hanging clothes are usually 24 inches deep and of variable width. Small clothes and linen closets should be no more than 48 inches

long to avoid dead space at the ends that is difficult or impossible for most users to reach, seated or standing, even if a 34-inch door is installed.

If wider closets are provided it is best that doors be double (hinged or bi-folding preferred) to provide maneuvering space and clear view of contents. If “walk-in” closets are planned, they must have usable doors to provide adequate space for passage of a person using a wheelchair.





*Notes in italic type are recommendations only and are not required by ANSI or the Guidelines.*

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## Chapter Four:

### REQUIREMENT 4

Accessible Route into  
and Through the Covered Unit

4



*...covered multifamily dwellings with a building entrance on an accessible route shall be designed and constructed in such a manner that all premises within covered multifamily dwelling units contain an accessible route into and through the covered dwelling unit.*

**Fair Housing Act Regulations, 24 CFR 100.205**

### **Definitions from the Guidelines**

**Loft.** An intermediate level between the floor and ceiling of any story, located within a room or rooms of a dwelling.

**Multistory dwelling unit.** A dwelling unit with finished living space located on one floor and the floor or floors immediately above or below it.

**Single-story dwelling unit.** A dwelling unit with all finished living space located on one floor.

**Story.** That portion of a dwelling unit between the upper surface of any floor and the upper surface of the floor next above, or the roof of the unit. Within the context of dwelling units, the terms “story” and “floor” are synonymous.

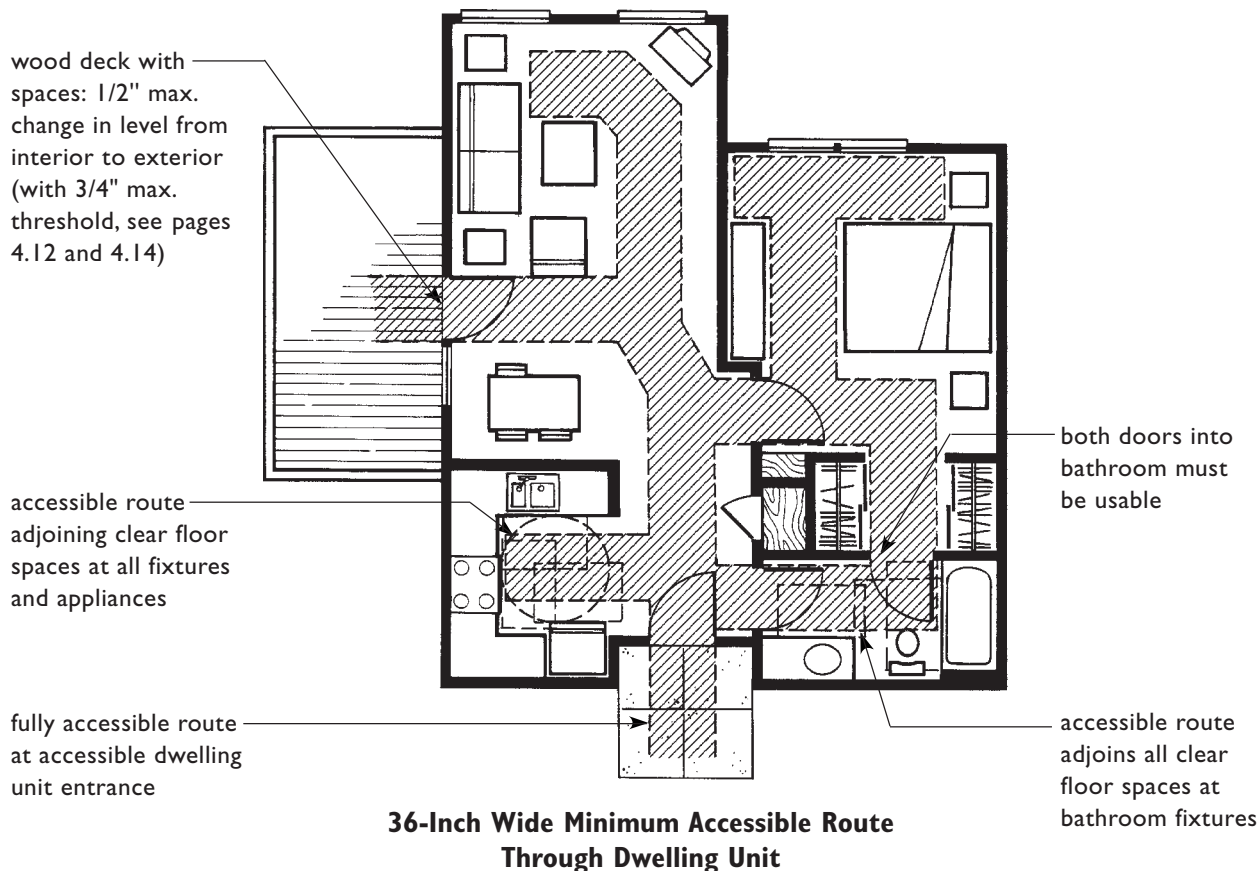
## INTRODUCTION

The Fair Housing Accessibility Guidelines (the Guidelines) specify that an accessible route be provided into and throughout the entire covered dwelling unit. The accessible route must pass through the main entry door, continue through all rooms in the unit, adjoin required clear floor spaces at all kitchen appliances and all bathroom fixtures, and connect with all secondary exterior doors.

Unlike public and common use areas, where a fully accessible route that complies with ANSI A117.1 - 1986, or an equal or more strict accessibility standard is required, the Guidelines designate specific elements of an accessible route that must be provided. The accessible route must be **1.** sufficiently wide and **2.** lacking in abrupt changes in level so residents with disabilities (and/

or their guests with disabilities) can safely use all rooms and spaces, including storage areas and, under most circumstances, exterior balconies and patios that may be part of their dwelling unit. See page 4.11 for exception at balconies and patios constructed of impervious materials.

An accessible route is not required into a basement or garage. However, doors from the interior of the dwelling unit to an unfinished basement or a garage attached to a single-story dwelling unit must be “usable”; see Chapter 3: “Usable Doors.” Providing an accessible route and a usable door in these circumstances will allow a resident to make later modifications, such as installing a ramp from the dwelling unit into the garage, thereby increasing usability of the unit.



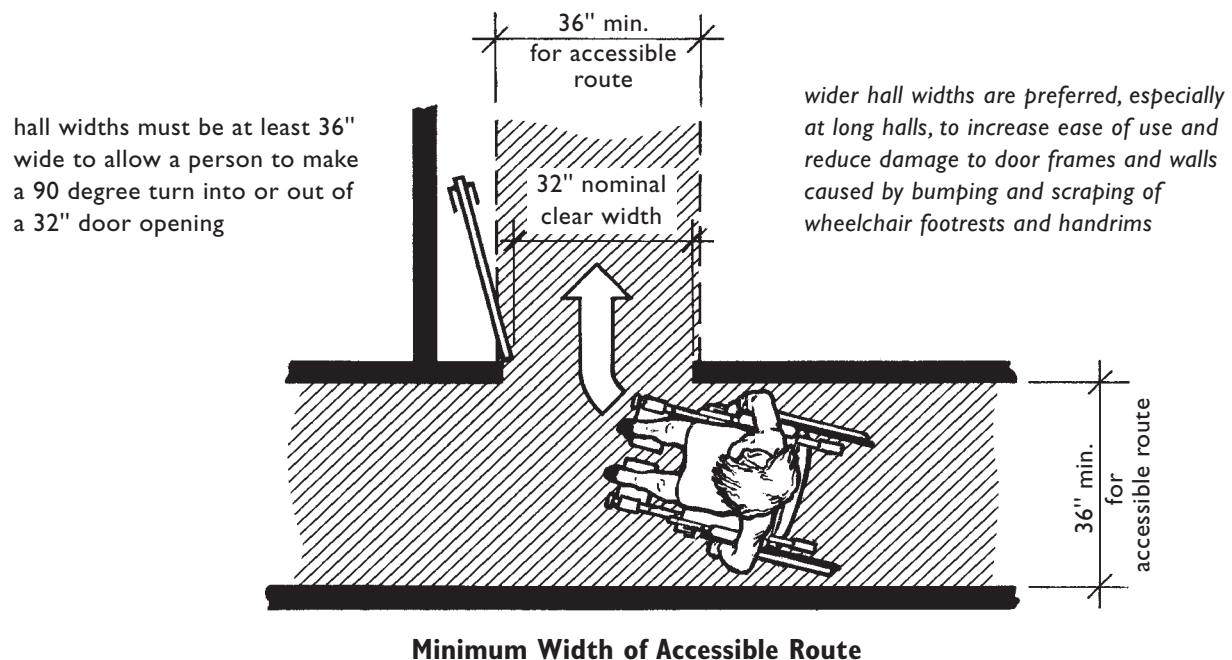
## ACCESSIBLE ROUTE

### WIDTH

The 36-inch wide fully accessible route as described in Chapters 1 and 2 must connect with the clear floor space outside the primary entry door of each covered dwelling unit. As the accessible route passes into the unit it may be reduced to 32 inches minimum clear width at the door. Throughout the unit the accessible route must be 36 inches wide or wider, except as it passes through passage doors,

where it may be reduced to 32 inches nominal clear width. See Chapter 3: "Usable Doors."

When specifications for accessible routes are presented in most accessibility standards they contain provisions for minimum height or headroom. The Guidelines, with respect to the interiors of dwelling units, do not include a specification for headroom. Protruding objects also are not addressed within the interior of the dwelling unit, but they should be avoided in all cases.

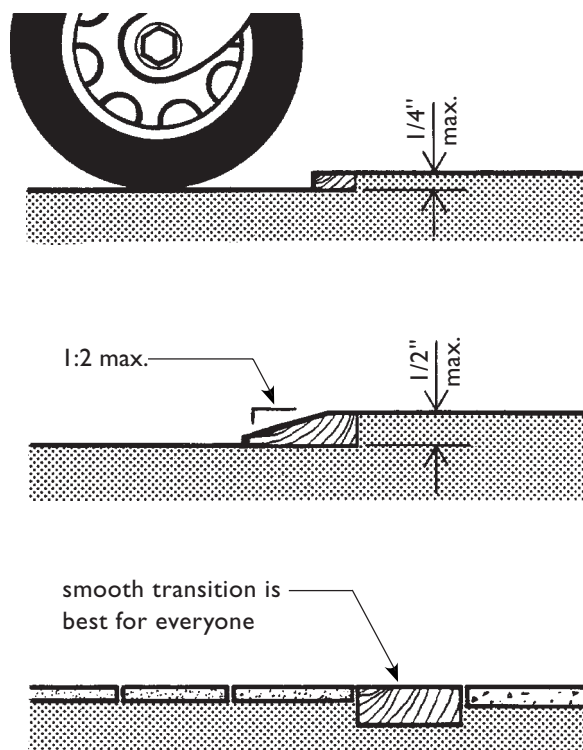


### CHANGES IN LEVEL

Within single-story dwelling units (and on the primary entry level of multistory dwelling units in buildings with elevators) the maximum vertical floor level change is 1/4 inch, except when a tapered threshold is used, the maximum height is 1/2 inch. Even small abrupt changes of level in the

surface of an accessible route pose a tripping hazard for many people and can be a significant obstacle for people using wheelchairs. People who walk wearing braces and/or who have difficulty maintaining balance are particularly susceptible to catching their toes on small changes in level.

Small abrupt changes in level occur most frequently at floor material changes and at door thresholds. Within the interior of the dwelling unit, thresholds should not be used or they should be thin and installed flush with the flooring surface. If a threshold must be used, it must not have a level change more than 1/4 inch without being beveled or tapered. When a tapered threshold is used, the level change may be a maximum of 1/2 inch. If an interior door threshold represents a change in level greater than 1/2 inch, it must be ramped and must slope at 1 inch in 12 inches maximum (1:12). Thresholds at exterior doors are addressed on page 4.12.



**Small Changes in Level Along Accessible Routes**

## **SPECIAL DESIGN FEATURES**

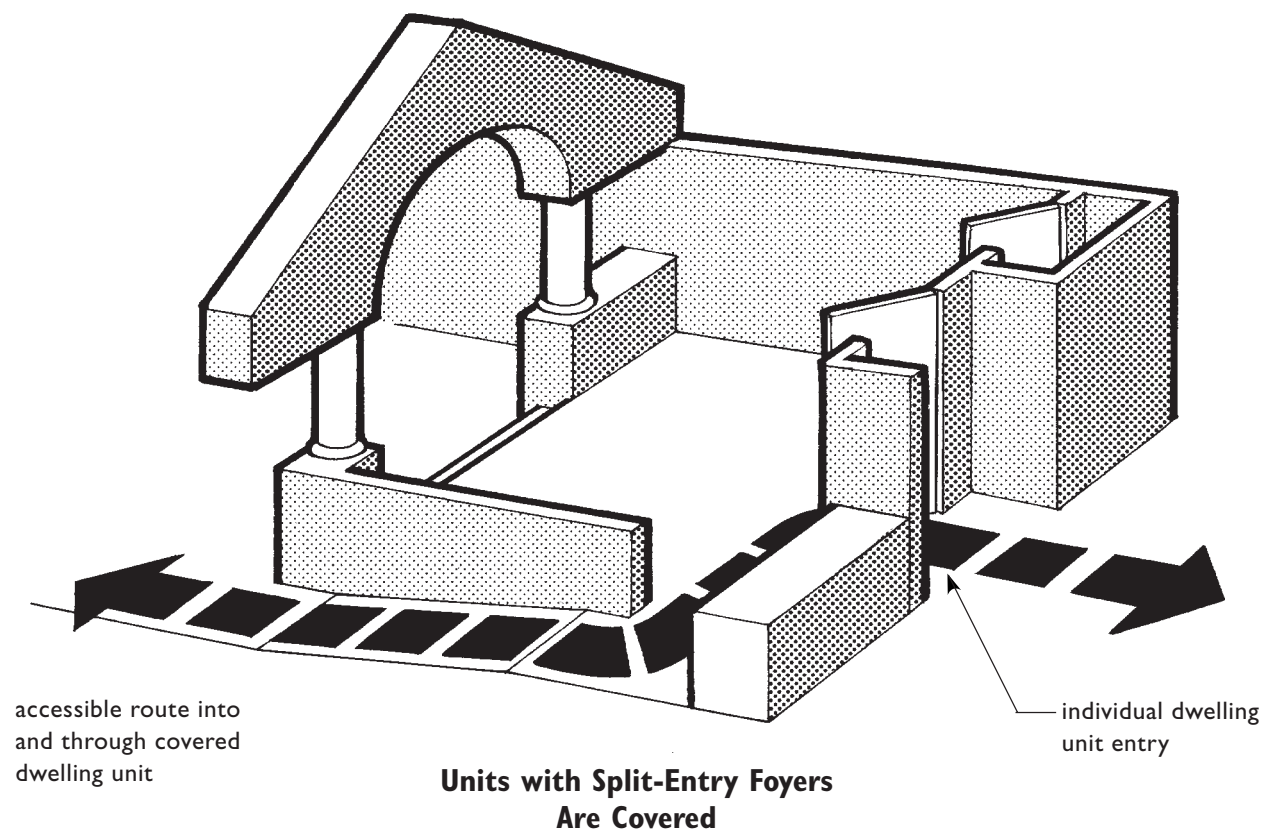
Single-story dwelling units are not prohibited from having specific design features, such as a split-level entry, a sunken living room, or a loft area; but the Guidelines do contain restrictions for each of these. Where a single-story dwelling unit has such a design feature, all portions of the unit, except the loft or the sunken or raised area, must be on an accessible route, i.e., the accessible route must be continuous throughout the dwelling unit and not be interrupted by the design feature.

The Guidelines specify that kitchens and all bathrooms, including powder rooms, must be

on an accessible route; therefore, no part of kitchens or bathrooms may be located in a raised or sunken area unless an accessible route can be provided to that area. However, a wet bar on a loft or in a sunken area that is not equipped with an accessible route is permissible since the wet bar is not a part of a kitchen. The combination of both a loft and a sunken area within the same dwelling unit prohibits residents with mobility impairments from using a significant percentage of their units and is thus not permitted under the Guidelines.

### **SPLIT-LEVEL ENTRIES**

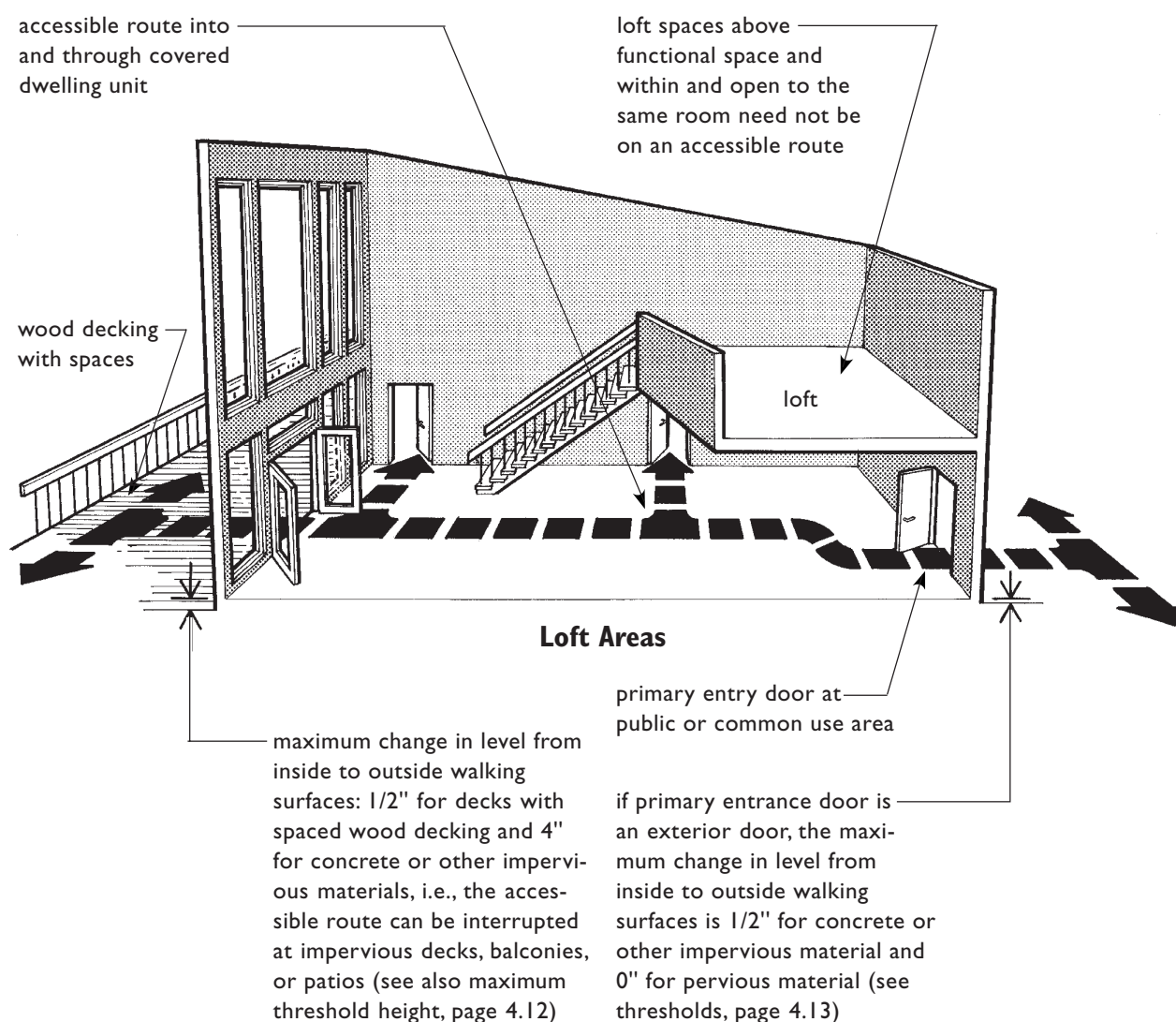
A split-level entry foyer, where the foyer is on one level and the remainder of the unit is down a few steps, does not exempt the unit from coverage by the Fair Housing Act. The entry is critical to providing an accessible route into and through the dwelling unit; therefore, an accessible route to the lower area must be provided by a ramp with a maximum slope of 1:12 or other means of access. It is recommended that the ramp comply with the other ramp requirements of ANSI A117.1 - 1986 or an equal or more strict accessibility standard. See ANSI 4.8.



## LOFTS

Dwelling units containing a loft are distinguished from multistory units in that a loft is open to the surrounding space and does not exceed 33-1/3 percent of the floor area of the room in which it is located. Each story (or floor) in a multistory unit is enclosed and contains finished living space with its own ceiling and floor. See "Accessible Routes in Multistory Dwelling Units" on page 4.9.

Because a loft is an intermediate level between the floor and ceiling of the unit, it is not considered a second story. Therefore, a dwelling unit with a loft is a single-story unit covered by the Guidelines. Since all primary or functional living spaces must be on an accessible route, secondary living spaces, such as a den, play area, or an additional bedroom are the only spaces that can be on a loft unless an accessible route can be taken to the loft.



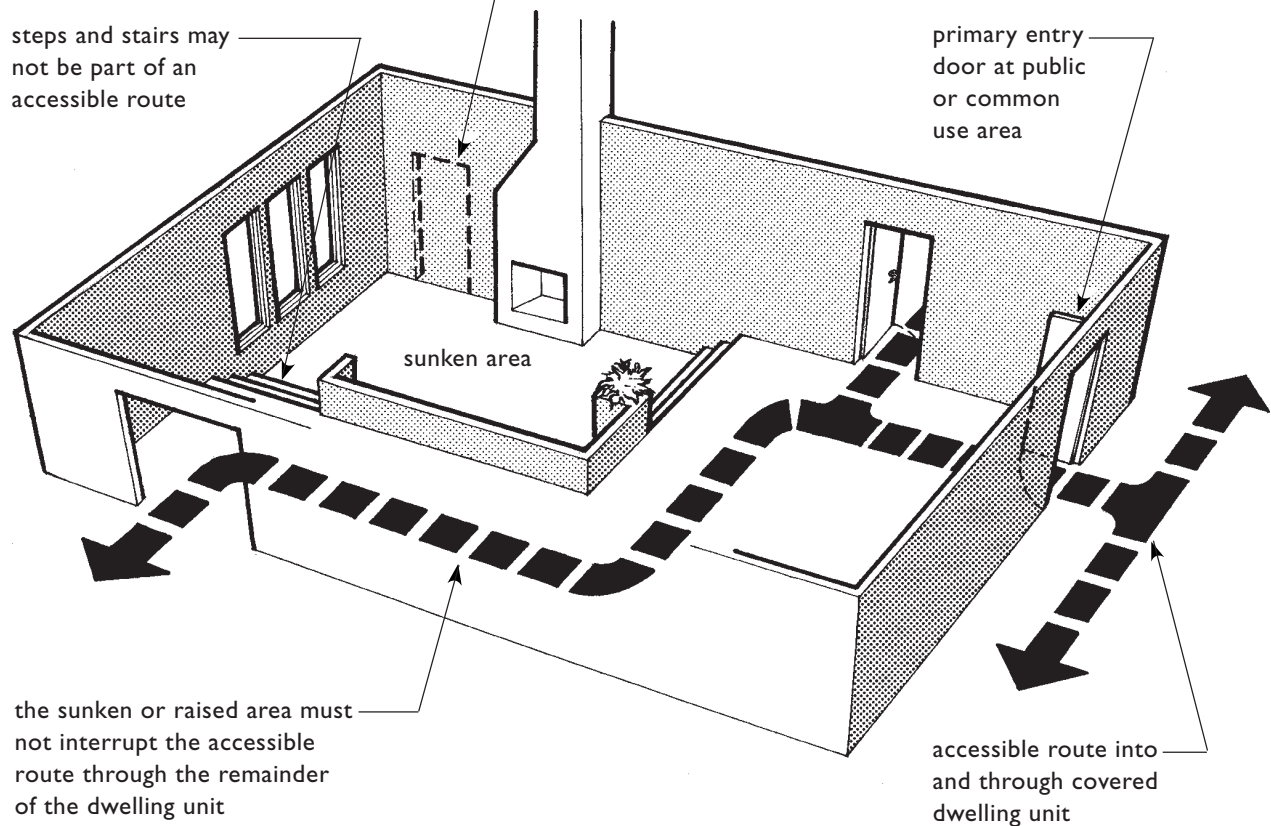
## RAISED OR SUNKEN AREAS

A raised or sunken area is usually limited to a few steps maximum and has less of a change in level than a loft. These “special design features” may not contain a functional space in its entirety. For example, the entire living room must not be sunken; however, an auxiliary feature such as a second sitting area could have several steps down to that level that is not served by an accessible route.

If there were a door located here leading to any interior or exterior room or space that could not otherwise be reached by the accessible route, then the sunken/raised area would have to be eliminated or made accessible.

steps and stairs may not be part of an accessible route

primary entry door at public or common use area



**Living/Dining Room with Sunken Area**

## ACCESSIBLE ROUTES IN MULTISTORY DWELLING UNITS

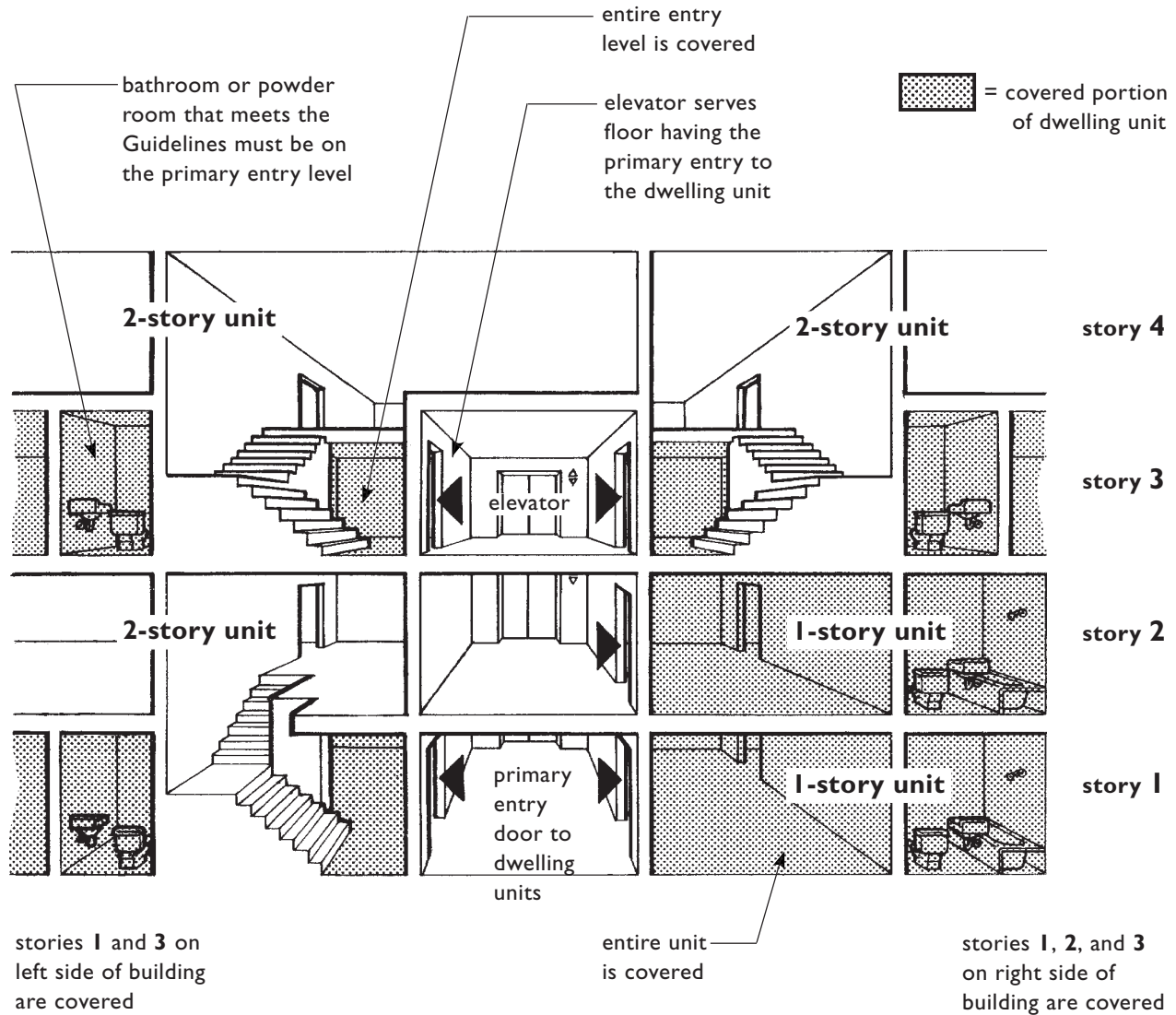
“Multistory dwelling unit” is defined in the Guidelines as a unit “with finished living space located on one floor and the floor or floors immediately above or below it.” Multistory dwelling units in buildings without one or more elevators are not covered by the Fair Housing Act; however, when multistory dwelling units are in buildings with elevators, the dwelling unit is covered and the story that is served by the building elevator must be the primary entry to the unit and must meet the requirements of the Guidelines. Where the primary entry level of a covered multistory dwelling unit contains either a raised or sunken area, that floor level is subject to the same requirements as discussed at “Lofts” and “Raised and Sunken Areas.”

Even though many people with significant mobility impairments may choose not to live in such a unit, multistory units, where the primary entry level meets the Guidelines, allow people with disabilities to visit with friends and relatives who may choose to live in a unit with more than one floor. A resident with a disability may choose to live in such a unit and add a lift at his or her own expense.

In multistory units the story that is served by the elevator must:

- 1.** be the primary entry to the unit,
- 2.** comply with Requirements 3 through 7 of the Guidelines for all rooms located on the entry floor level, and
- 3.** contain a usable bathroom or powder room.

If there is both a bathroom and a powder room on the entry level of a multistory unit, then the bathroom must meet Requirement 7 of the Guidelines and the powder room needs to meet only Requirements 3, 4, and 5 of the Guidelines. In cases where only a powder room is provided on the entry level, it is treated as a bathroom and must: **1.** be on the accessible route, **2.** have a door with a 32-inch nominal clear width, **3.** meet the maneuvering and clear floor space requirements at toilets and lavatories, **4.** allow the user to enter the room, close the door, use the facilities, and reopen the door to exit, **5.** have reinforcing around the toilet for future installation of grab bars, and **6.** have switches, outlets, and controls in accessible locations. See page 7.38 and powder room plans starting on page 7.81.



**Single-Story Units and the Primary Entry Level  
of Multistory Units in Buildings  
with One or More Elevators Are Covered**

**THRESHOLDS AND ACCESSIBLE  
ROUTES AT EXTERIOR DOORS**

The Guidelines allow the change in level between the interior floor level of the dwelling unit and an outside surface or platform to vary somewhat, depending upon **1.** whether the door is a primary or secondary door and **2.** the construction material of the outside landing surface. If the primary entry door to a dwelling unit has direct exterior access, the landing surface outside the door, as part of the accessible route, must be level with the interior floor, unless the landing is constructed of an impervious material, such as concrete; in which case, the landing may be up to 1/2 inch (but no more than 1/2 inch) below the interior floor of the dwelling unit. However, to prevent water damage, the finished surface outside the primary entry door may be sloped at a maximum of 1/8 inch for every 12 inches.

When a secondary exterior door exits onto decks, patios, or balcony surfaces constructed of impervious materials, the accessible route may be interrupted. In this case, the outside landing surface may be dropped a maximum of 4 inches below the floor level of the interior of the dwelling unit (or lower if required by local building code) to prevent water infiltration at door sills. If the exterior surface is constructed of pervious material, such as a wood deck that will drain adequately, that surface must be maintained to within 1/2 inch of the interior floor level. Note: When measuring the distance between the floor inside and the outside surface, the interior floor level must be calculated from the finished floor and not from the subfloor. If carpet is to be installed, the measurement should be calculated with a fully compressed carpet and, if present, the pad. In addition to the above changes in floor level, the Guidelines specify the maximum height for the door threshold, which is discussed on page 4.12.

**Maximum Allowable Height Difference  
Between Interior Floor Level and Exterior Floor Level**

| <b>level difference</b> |  | <b>at primary entry door</b>                                     |
|-------------------------|--|------------------------------------------------------------------|
| <b>0"</b>               |  | pervious construction<br>(e.g., wood decking with spaces)        |
| <b>1/2"</b>             |  | impervious construction (e.g.,<br>concrete, brick, or flagstone) |
| <b>level difference</b> |  | <b>at secondary door</b>                                         |
| <b>1/2"</b>             |  | pervious construction                                            |
| <b>4"</b>               |  | impervious construction                                          |

## THRESHOLDS AT EXTERIOR DOORS

The concept of an accessible route is intended to ensure the maintenance of a continuous path of travel with no abrupt changes in level so people with disabilities who use wheelchairs or scooters and those who walk are not impeded. However, changes in level are inevitable at exterior doors because thresholds and changes in level are needed to control and/or prevent water infiltration.

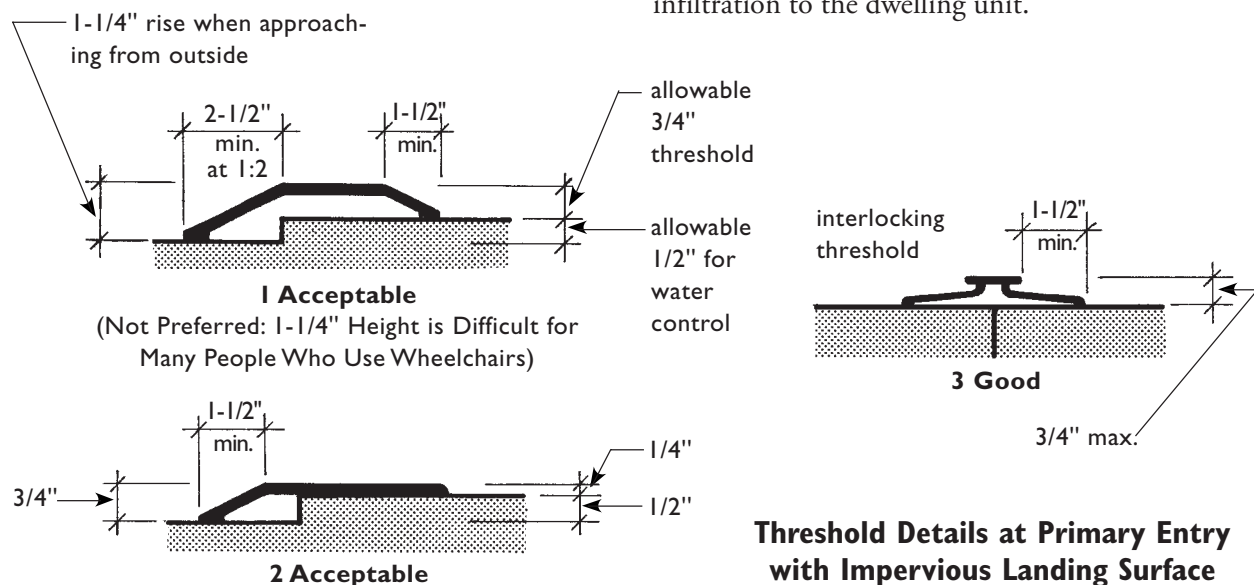
The Guidelines allow limited changes in levels at exterior doors along accessible routes. In addition to the change in floor level between the interior floor and exterior landing discussed on page 4.11, the Guidelines specify that thresholds at these exterior doors, including sliding door tracks, shall be no higher than 3/4 inch. The Guidelines further state that changes in level at these locations must be beveled with a slope no greater than 1:2.

In the case of primary entry doors where the exterior landing surface is impervious, the exterior landing surface is permitted to be below the finish floor level by 1/2 inch. Therefore, the Guidelines allow an overall change in level of 1-1/4 inch on the exterior side of the primary entry door.

Note, however, as already stated, these changes in level must be beveled with a slope no greater than 1:2. See the first illustration below.

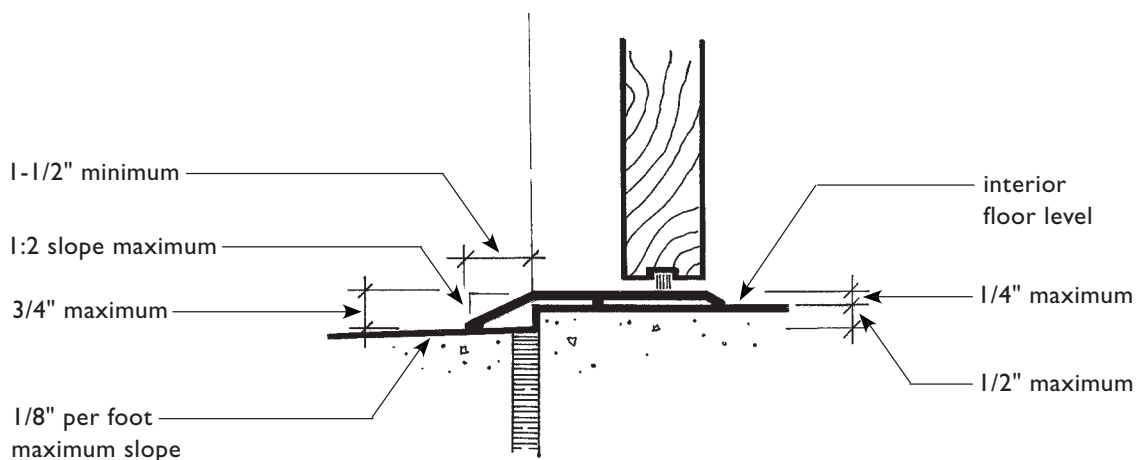
Exterior door thresholds of 3/4 inch, even when beveled, can be extremely difficult to navigate for some persons who use wheelchairs, and the additional change in level when outside landing surfaces are impervious adds to this difficulty. Because of this, it is recommended that other solutions be considered which both provide for less of a change in level at the door threshold and also are designed to prevent water infiltration. One such solution is to use a threshold that rises a maximum of 1/4 inch on the inside and drops 3/4 inch at a slope of 1:2 at the exterior. See illustration two below. An even better solution is to bring the exterior surface up to the same level as the interior floor using an interlocking threshold. See illustration 3.

The illustrations on pages 4.13 through 4.14 offer design details of door thresholds that meet the requirements of the Guidelines as well as recommended door thresholds that provide for lesser changes in level while still preventing water infiltration to the dwelling unit.



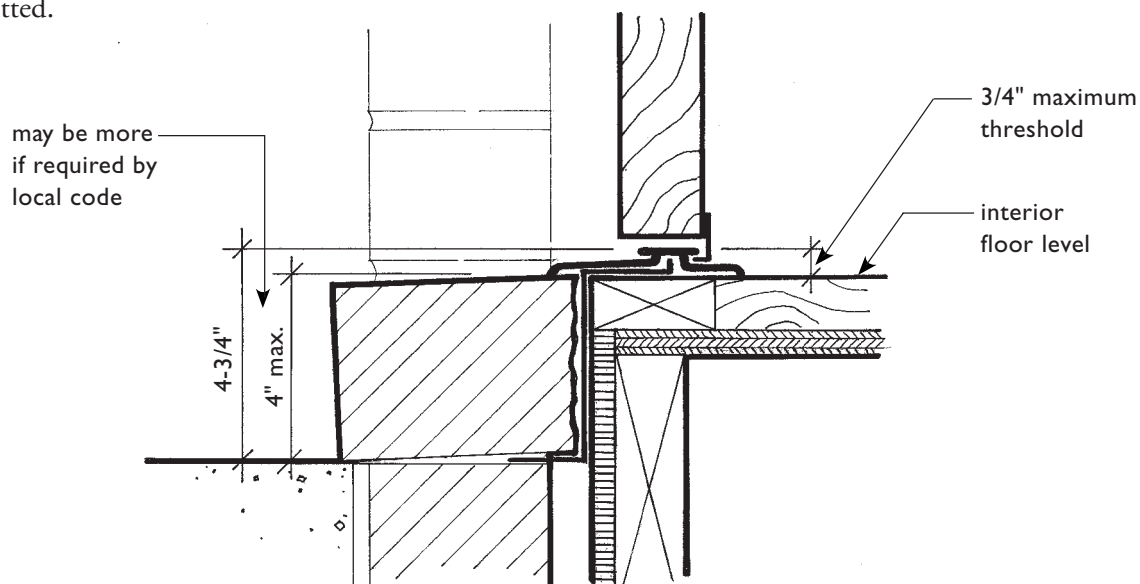
### Swinging Primary Entry Door at Concrete Landing

showing allowable changes in level at primary entry doors with direct exterior access onto concrete or other impervious landing surface where 1/2-inch maximum changes in level are permitted.



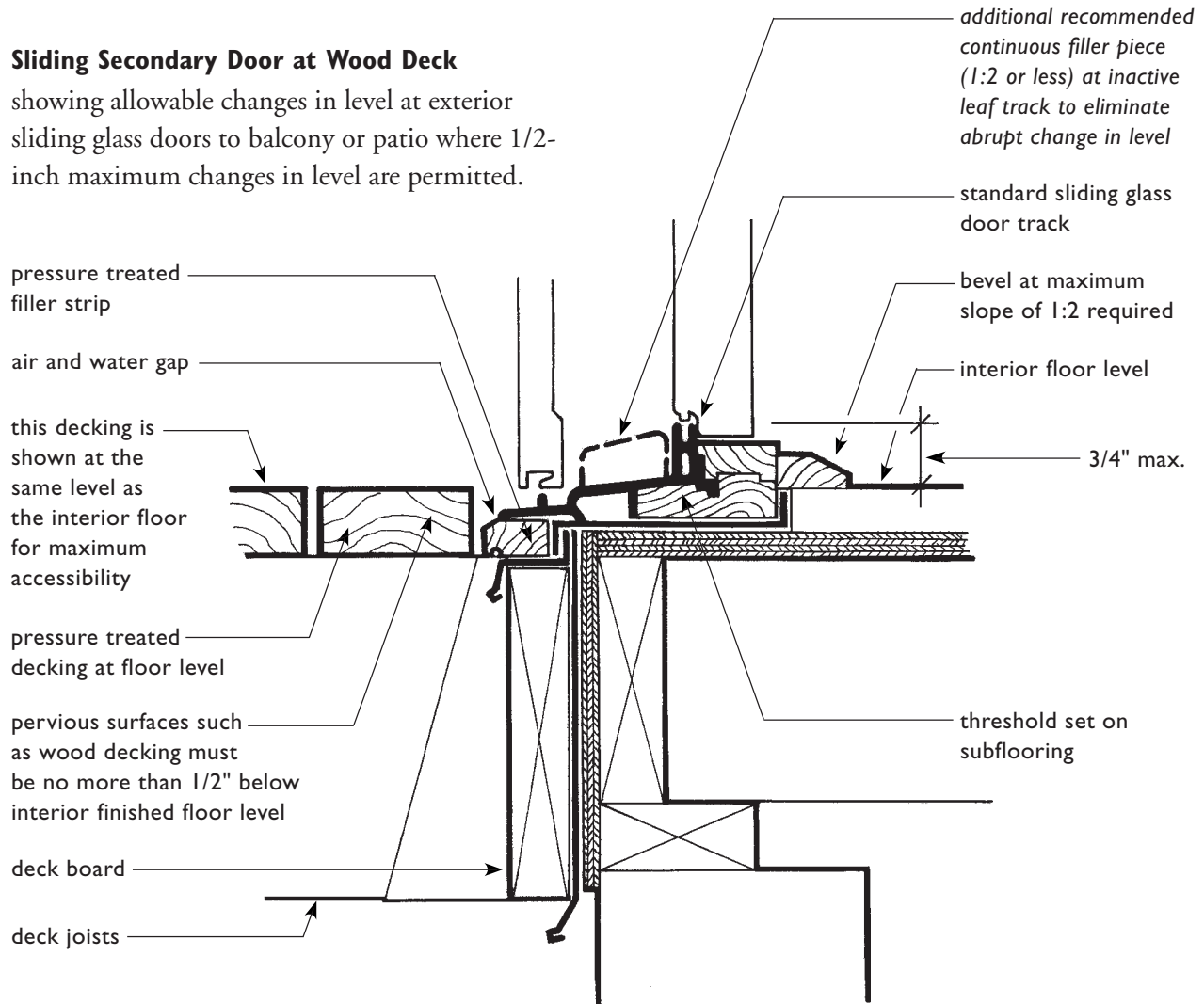
### Swinging Secondary Door at Concrete Landing

showing allowable changes in level at exterior swinging doors onto concrete or other impervious landing surface where 4-inch changes in level are permitted.



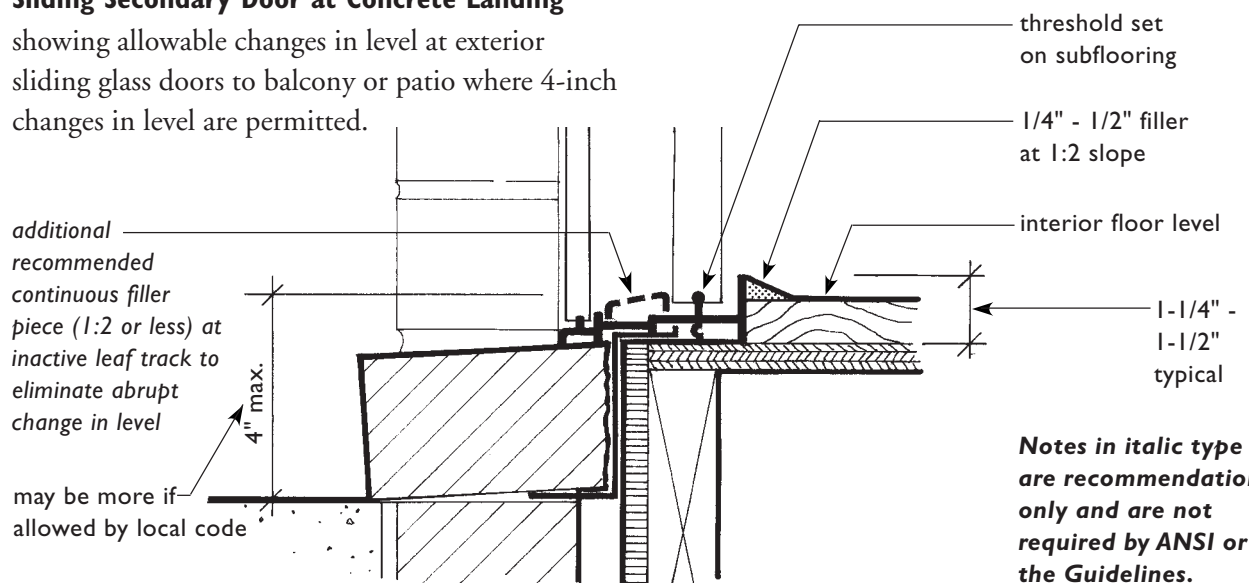
### Sliding Secondary Door at Wood Deck

showing allowable changes in level at exterior sliding glass doors to balcony or patio where 1/2-inch maximum changes in level are permitted.



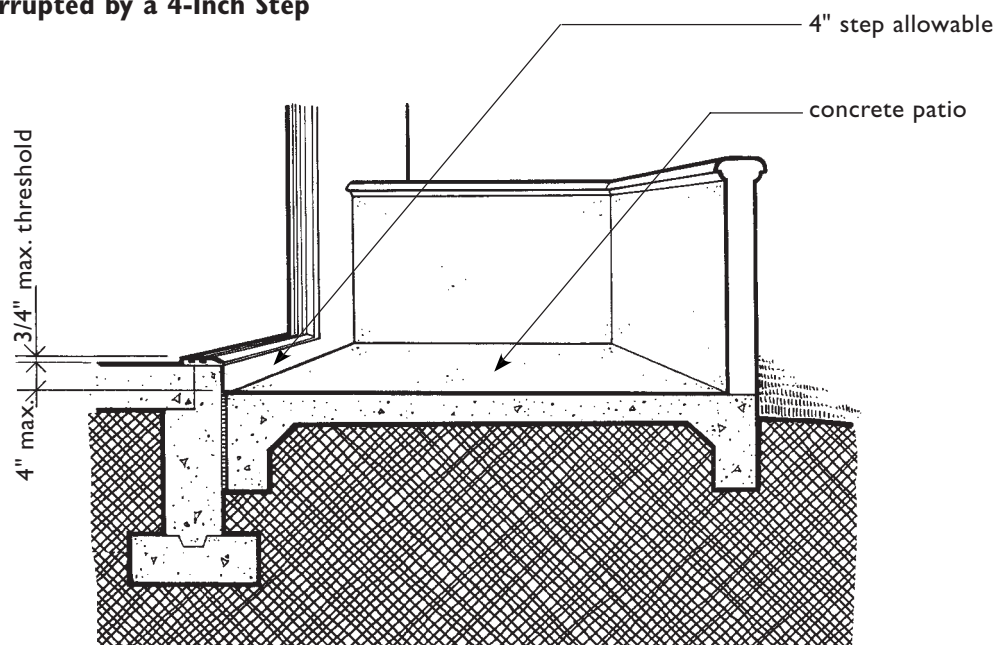
### Sliding Secondary Door at Concrete Landing

showing allowable changes in level at exterior sliding glass doors to balcony or patio where 4-inch changes in level are permitted.



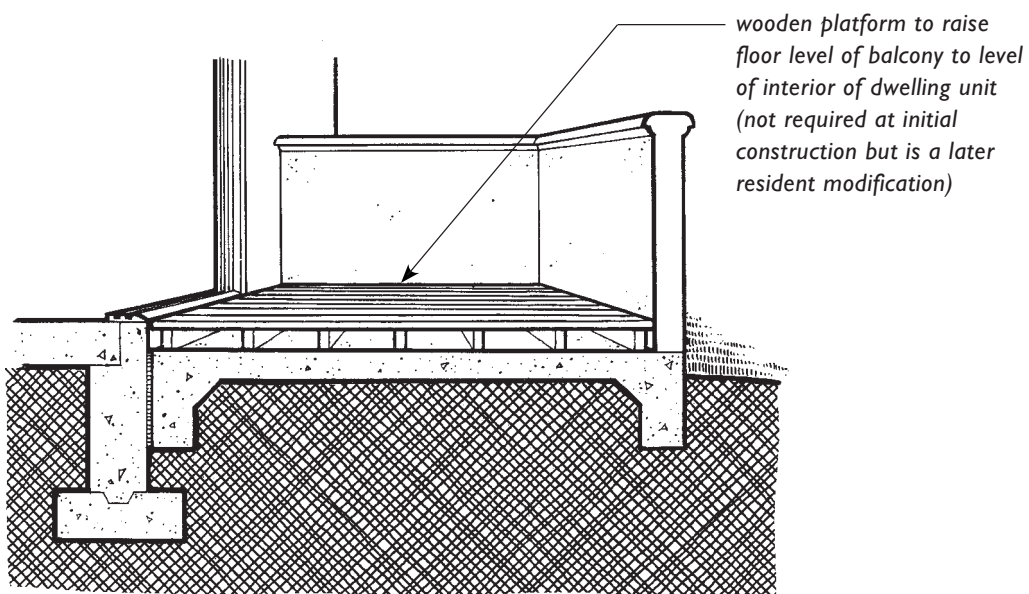
**Notes in italic type are recommendations only and are not required by ANSI or the Guidelines.**

**Accessible Route onto Balcony  
Constructed of Concrete, Brick, or Flagstone  
May Be Interrupted by a 4-Inch Step**



*Notes in italic type are recommendations only and are not required by ANSI or the Guidelines.*

**Accessible Route onto Balcony Created with the Addition of a Raised Platform (Added by the Resident)**



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## Chapter Five:

### REQUIREMENT 5

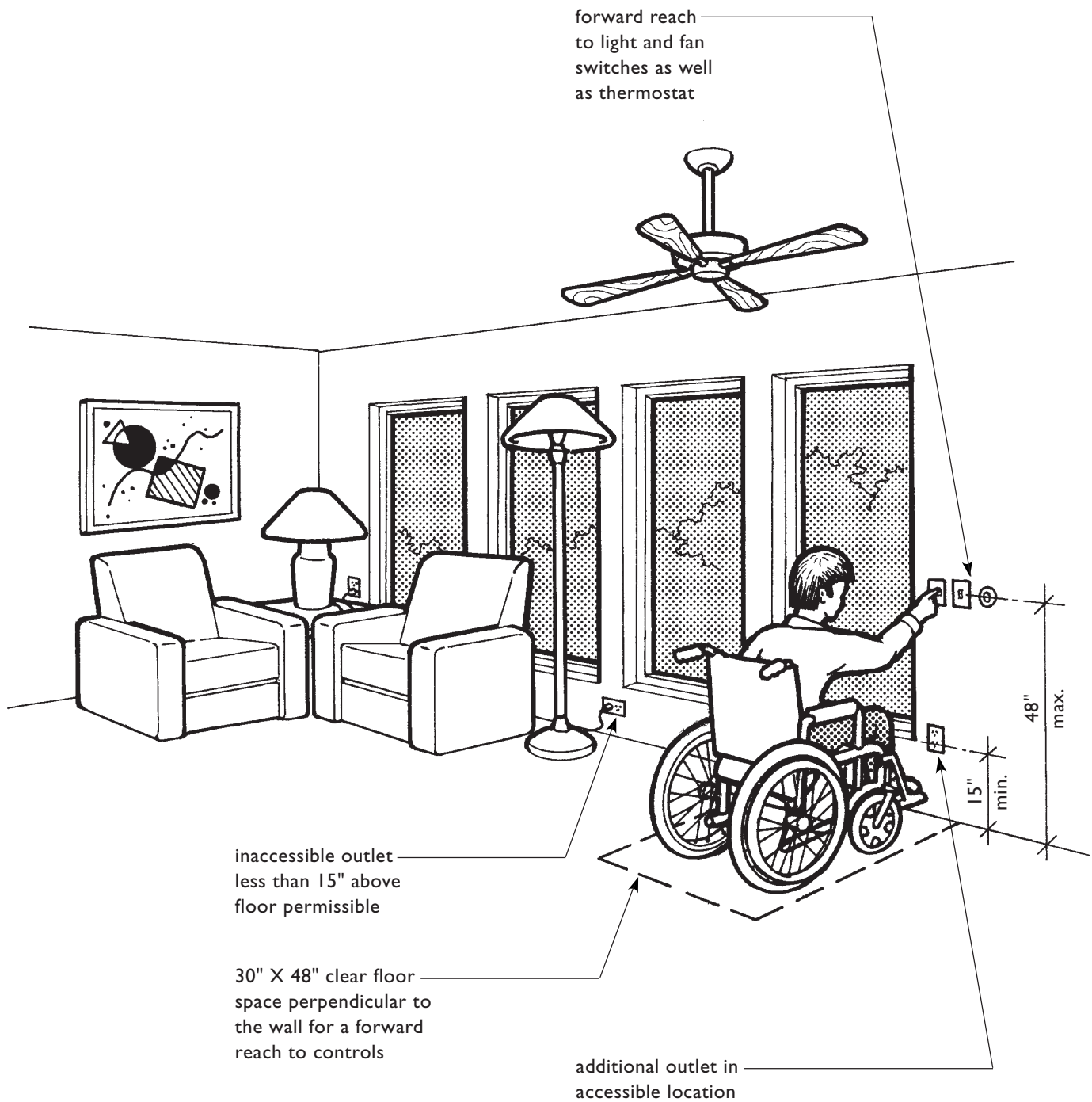
Light Switches, Electrical Outlets,  
Thermostats, and Other Environmental  
Controls in Accessible Locations

5



*...covered multifamily dwellings with a building entrance on an accessible route shall be designed and constructed in such a manner that all premises within covered multifamily dwelling units contain light switches, electrical outlets, thermostats and other environmental controls in accessible locations.*

**Fair Housing Act Regulations, 24 CFR 100.205**



**All Covered Switches, Outlets, and Controls  
Operated on a Frequent Basis Must be in Accessible Locations**

## INTRODUCTION

The ANSI specifications for accessible controls and operating mechanisms require a clear floor space to allow an approach by a person using a wheelchair, specify the height of the operable portion of the control, and require little or no force be exerted to operate the control. The Fair Housing Accessibility Guidelines (the Guidelines) do not require controls to be fully accessible but specify that light switches, electrical outlets, thermostats and other environmental controls, which are operated on a regular or frequent basis in the daily use of a dwelling unit, be in accessible locations.

The Guidelines' specifications for accessible locations, based on the ANSI (A117.1 - 1986) Standard, address where to position controls and outlets to be within the reach range of a seated user. Force and type of motion required to operate controls are not covered by the Guidelines.

## CONTROLS AND OUTLETS SUBJECT TO THE REQUIREMENTS OF THE GUIDELINES

**Environmental controls** such as thermostats and other heating, air-conditioning, and ventilation mechanisms including ceiling fans and electrically operated skylights must be positioned in accessible locations, as must **light switches** and **electrical outlets** for each room. All these covered controls and outlets must be in accessible locations, with a few exceptions.

The Guidelines allow, for example, controls or outlets that do not satisfy the requirements, if comparable controls or outlets in accessible locations are provided within the same area. Comparable controls or outlets are those that perform the same function. For example, floor outlets (which are inaccessible) or outlets mounted in the corner of kitchen counters are permitted under the Guidelines, provided other outlets are available to serve the same space or area.

Controls and outlets not covered by the Guidelines include circuit breakers or electrical outlets dedicated to individual appliances such as refrigerators, built-in microwave ovens, washing machines, and dryers because neither circuit breakers nor these outlets are accessed frequently by residents. Appliance controls are not required to be in accessible locations because the Fair Housing Act is not intended to regulate the design of appliances.

Thus, when appliance controls are built into or are located on the appliance itself, they are not considered to be covered controls. Range or washing machine controls need not be within the reach range of seated users, although certainly it is preferred that such controls be within reach. Range

hood fan and light controls, when mounted on the hood, are part of an appliance and are, therefore, not covered. However, if the range hood fan and light are wired to a separate switch on a wall or any location other than on the hood, range, or cooktop, then the control must be in an accessible location.

Garbage disposals do not fall under any of the categories of covered controls. The operating switch for a garbage disposal is not mounted on the appliance itself but is wired to another location. Although not a covered control, since garbage disposals are used frequently and since it is relatively simple to place operating switches for

garbage disposals in accessible locations, it is recommended that it be done.

Emergency interrupt switches to mechanical systems such as furnaces or hot water heaters also are not covered by the Guidelines. However, it is recommended that such switches be in locations that can be reached from a seated position. Even when the mechanical system is located behind a narrow door in a small closet dedicated specifically to that purpose, it is recommended that the interrupt switch be positioned so it can be reached from outside the closet by a person using a wheelchair.

### **SWITCHES, OUTLETS, AND CONTROLS COVERED BY THE GUIDELINES**

#### **Covered**

- light switches for controlling all room lights
- electrical outlets
- environmental controls
  - thermostats and controls for other heating, air-conditioning, and ventilation systems

#### **Not Covered**

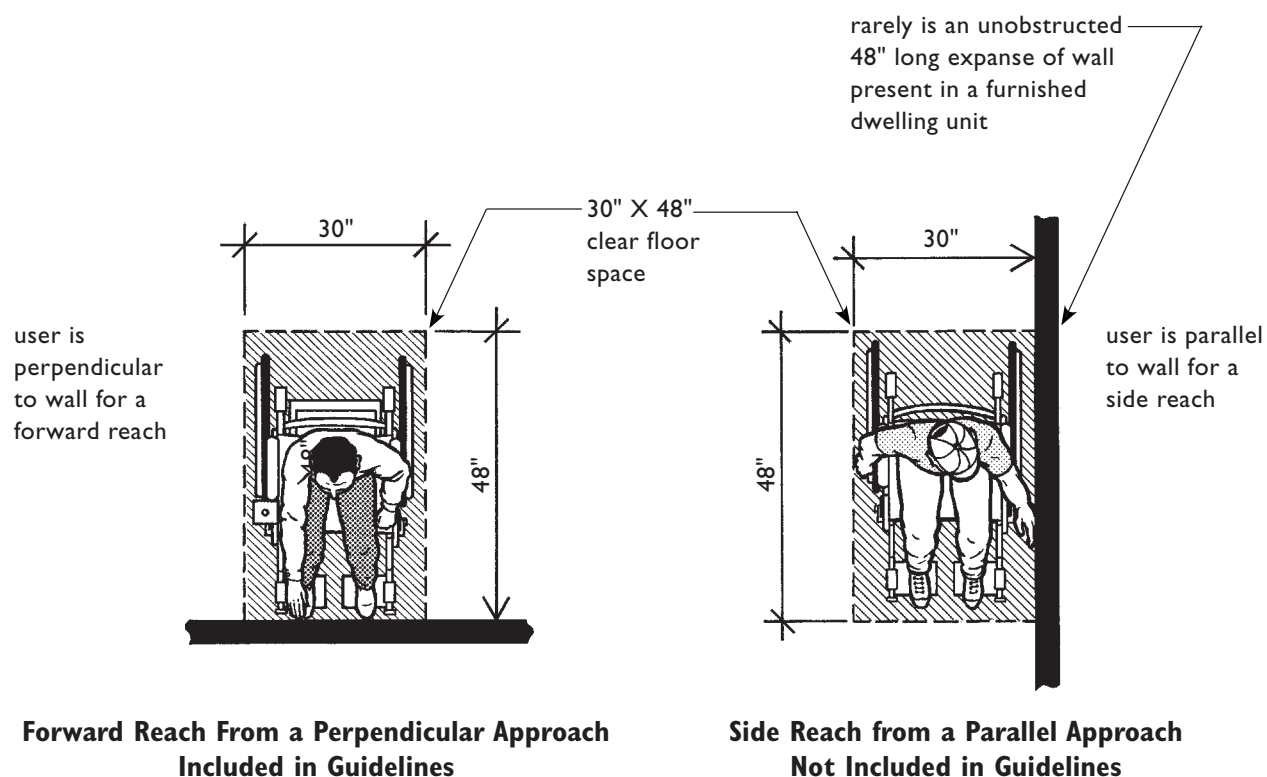
- circuit breakers
- appliance controls
- outlets dedicated for specific appliances

## ACCESSIBLE LOCATIONS

The Guidelines contain height specifications for wall-mounted controls and outlets based upon the reach ranges of seated people given in the ANSI Standard. Typically ANSI and other accessibility standards present reach ranges for both forward and side reaches: **1.** where the user must reach over an obstruction, and **2.** where the user's approach is not restricted by an obstruction. One of these positions, a side reach from a parallel position without an obstruction, requires a 48-inch long clear floor space parallel and close to the wall so a user can get close enough to reach controls and

switches. Once a dwelling unit is furnished, sufficient room to execute such a parallel approach usually is not available; thus this specification was omitted from the Guidelines.

To accommodate all users in situations where there may or may not be a built-in counter, base cabinet, or other obstruction to interfere with reach, the Guidelines include specific requirements for mounting controls and switches so a person using a wheelchair can execute: **1.** a forward reach with no obstruction, **2.** a forward reach over an obstruction, and **3.** a side reach over an obstruction.

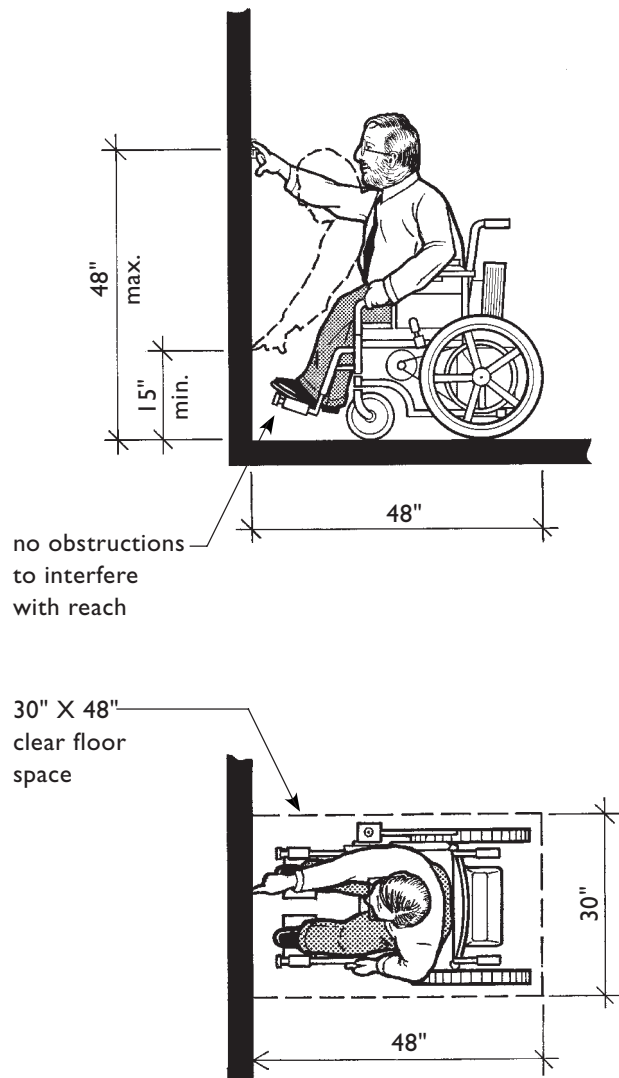


## FORWARD REACH WITH NO OBSTRUCTION

Where there are no obstructions to interfere with the reach of a person using a wheelchair, controls and outlets may be mounted in a range from 15 to 48 inches above the floor. There must be a clear floor space of 30 inches x 48 inches perpendicular to the wall, adjoining a 36-inch wide accessible route, to allow a person using a wheelchair to approach and get into position to execute a forward reach to the control or outlet. See Chapter 4: “Accessible Route into and Through the Covered Dwelling Unit.”

Thermostats and other controls that must be read pose additional considerations. Even though people using wheelchairs may be able to execute a forward reach of 48 inches at a clear wall, they may have difficulty seeing the small numerals and indicators generally found on thermostats. A person using a wheelchair, when positioned perpendicular to a wall, must lean forward over his or her feet and knees making it difficult to get close enough to read small type. Therefore, it is critical that thermostats and similar controls that must be read are mounted at or lower than 48 inches above the floor.

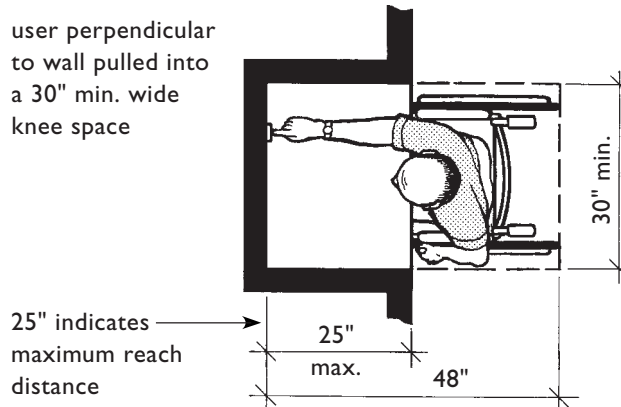
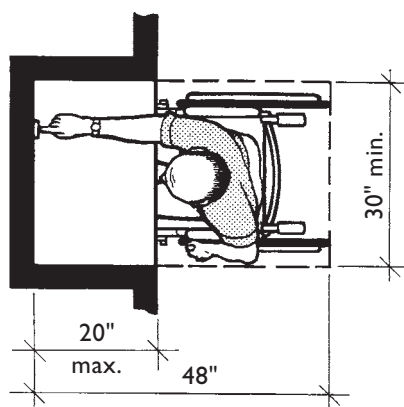
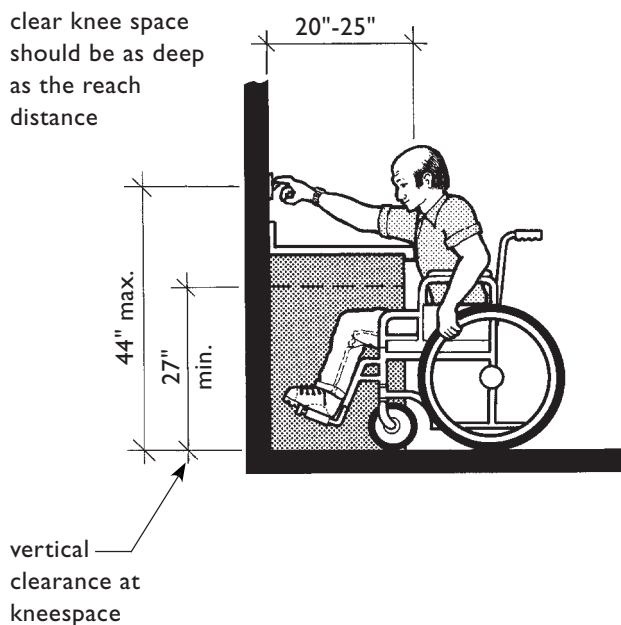
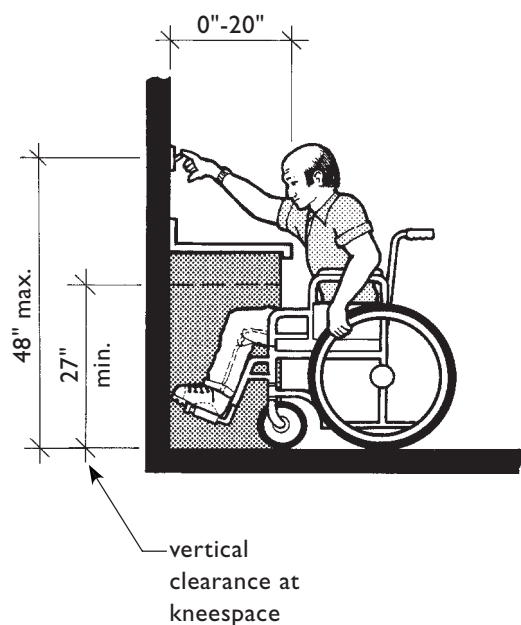
the counter/obstruction to allow a person using a wheelchair to pull up and execute a forward reach over the obstruction.



**High and Low Forward Reach Limits  
From a Perpendicular Approach**

For obstructions extending from 0 to 20 inches from the wall the maximum height for a control or outlet over the obstruction is 48 inches above the floor. Deeper shelves, extending 20 to 25 inches from the wall, reduce the maximum mounting height of controls and outlets to 44 inches. Controls and outlets mounted over obstructions

extending further than 25 inches are outside the reach range of people using wheelchairs and are not considered to be in accessible locations. However, HUD allows an industry tolerance of 1/2 inch to permit the installation of standard countertops that may project from the back wall for a maximum dimension of 25-1/2 inches.

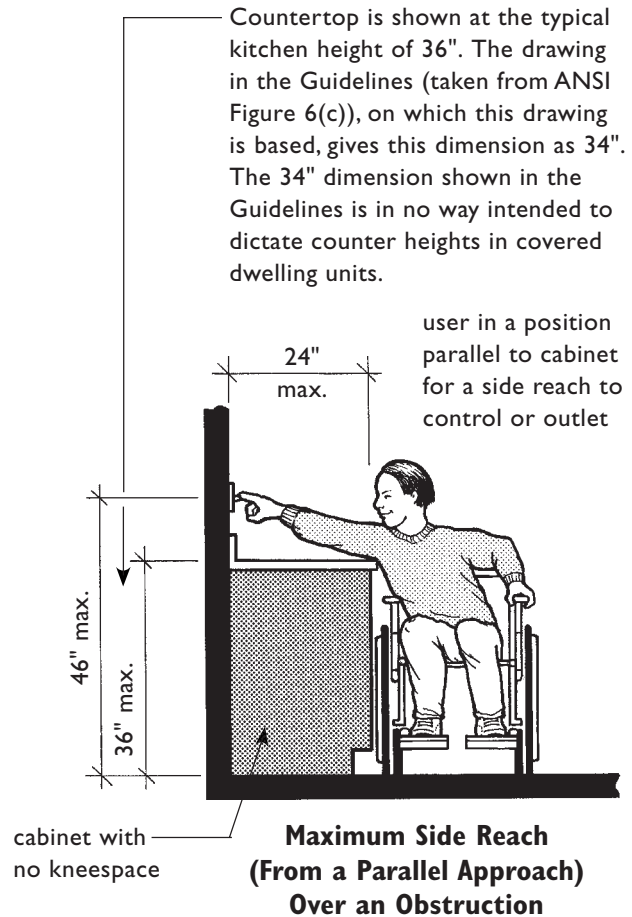


**Maximum Forward Reach  
(From a Perpendicular Approach) over an Obstruction**

## SIDE REACH OVER AN OBSTRUCTION

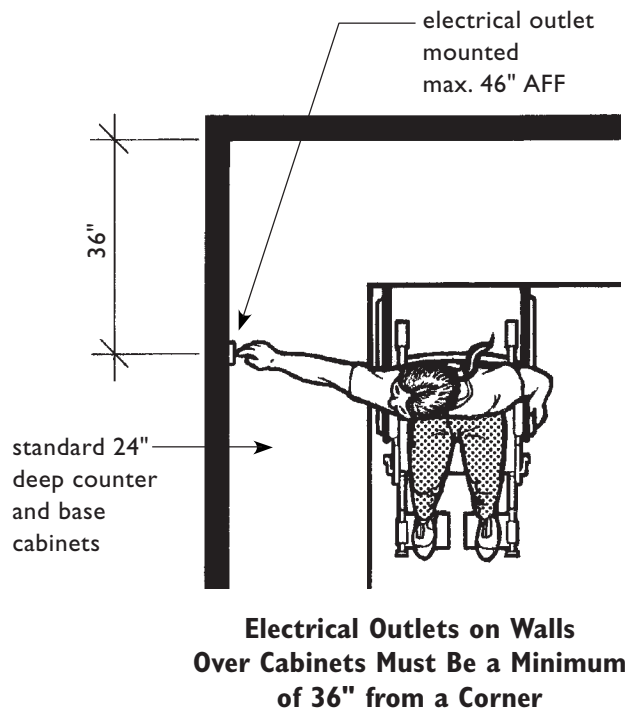
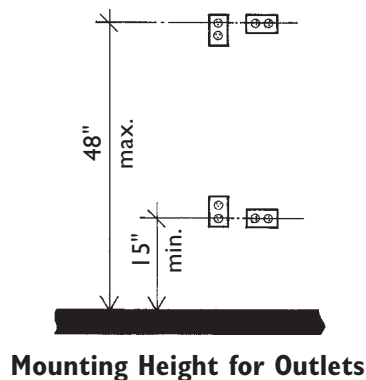
To reach controls and outlets mounted over base cabinets which lack knee space, a person using a wheelchair must be able to approach the cabinet from a position parallel to the cabinet and execute a side reach. This parallel position is made up of a 30-inch x 48-inch clear floor space adjoining a 36-inch wide minimum accessible route. When executing a side reach over a cabinet, the upper limit of the range is reduced to 46 inches.

Cabinet depth is limited to 24 inches. HUD permits use of a standard 24-inch deep cabinet with an additional extension of 1 to 1-1/2 inches for countertops for a maximum depth of 25-1/2 inches. If a built-in shelf, cabinet, or other obstruction must be deeper than 25-1/2 inches, then any switches, outlets, and controls that must be in accessible locations are not permitted to be installed over such deep surfaces.



## MOUNTING LOCATIONS FOR OUTLETS

For accessible controls and outlets, all operable parts must be within the ranges specified above. When electrical outlets are installed horizontally or vertically, duplex outlets must have both receptacles within the reach range. Measurements are made as illustrated below.

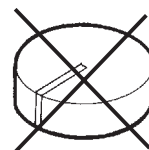


## RECOMMENDATIONS FOR INCREASED ACCESSIBILITY

The Guidelines do not specify that controls and switches installed in dwelling units be accessible in terms of ease of operation, but that they be in accessible locations. For anyone specifying building products and appliances and wishing to enhance the accessibility of dwelling units, the following is a brief discussion of the types of switches and controls that increase usability for people with disabilities, as well as other persons who may experience hand limitations.

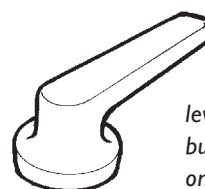
The most universally usable switches are rocker switches, toggle switches, and touch type electronic switches because they can be operated by a single touch, require little force, and do not require gripping, twisting, or fine finger dexterity.

Lever controls are generally usable by people with disabilities because they do not require grasping or significant force, and in some instances, their shape may double as an integral pointer to indicate the control's position. For people with limited strength or hand dexterity, smooth round knobs are especially difficult, as are controls that must be pushed down and turned at the same time.

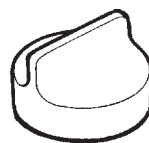


smooth round knobs are difficult for people with hand limitations as well as for people with visual impairments

### Poor Choice



levers are ideal but rarely found on appliances

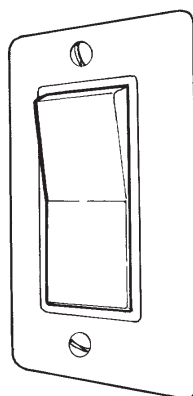


blades help indicate position and make turning somewhat easier

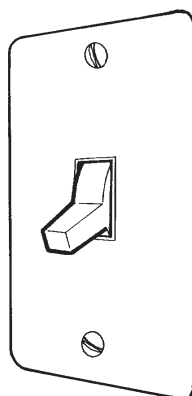


small lever or extended blade provides position pointer and leverage for easy turning without gripping

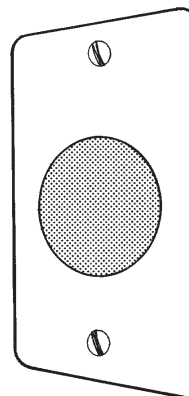
### Better Control Choices



rocker



toggle



touch  
sensitive

### Switches Most People Can Operate

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## Chapter Six:

### REQUIREMENT 6

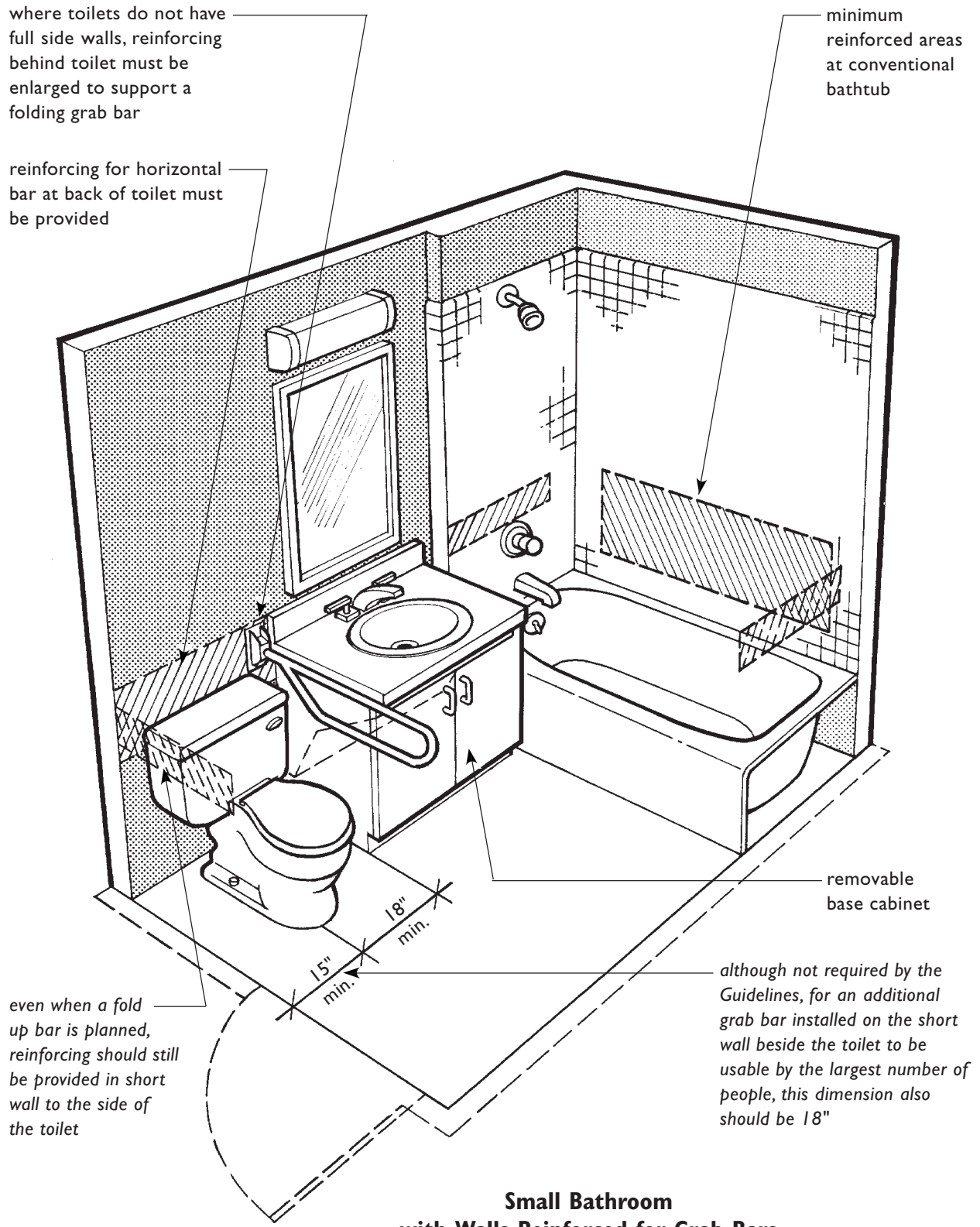
#### Reinforced Walls for Grab Bars



6

*...covered multifamily dwellings with a building entrance on an accessible route shall be designed and constructed in such manner that all premises within covered multifamily dwelling units contain reinforcements in bathroom walls to allow later installation of grab bars around toilet, tub, shower stall and shower seat, where such facilities are provided.*

**Fair Housing Act Regulations, 24 CFR 100.205**



## INTRODUCTION

The Fair Housing Accessibility Guidelines (the Guidelines) do not require that grab bars be installed in bathrooms. However, the Guidelines do require that bathroom walls be sufficiently strong to allow for later installation of grab bars for resident use. This requirement applies to all bathrooms, and also to powder rooms when the powder room is the only toilet facility on the entry level of a multistory dwelling unit in an elevator building (see page 4.9). Reinforcing methods are discussed later in this chapter.

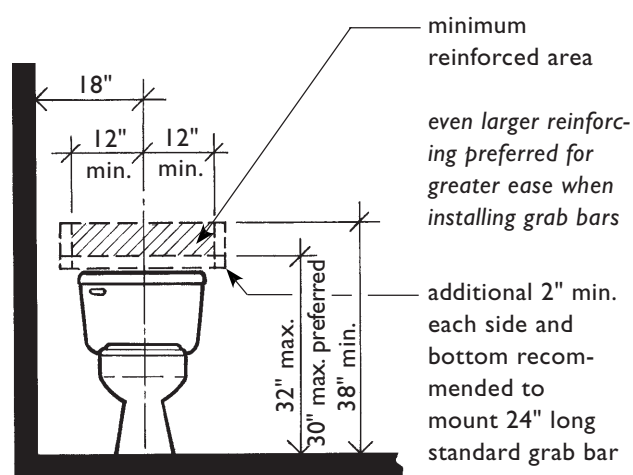
Grab bars are critical for many people with mobility impairments to be able to safely transfer on and off the toilet. Safety for everyone is greatly increased by the addition of grab bars at bathtubs and showers. The Guidelines do not prescribe the type or size of grab bars, nor the structural strength they must exhibit. The Guidelines state only that the necessary reinforcement must be placed “to permit the later installation of appropriate grab bars.” HUD encourages builders to look at the 1986 ANSI A117.1 Standard, or an equivalent or stricter standard, or their state or local building code in planning for or selecting appropriate grab bars.

It is recommended that building owners and managers permanently mount directions for installation of grab bars in every dwelling unit where applicable. The type of construction should be described, where reinforcing is located, and suggestions made for the most effective method for installing grab bars. These notices could be laminated to the inside of a linen closet door or to the inside of a utility or water heater/furnace door.

## REINFORCING FOR GRAB BARS AT TOILETS

The Guidelines specify that reinforcing at least 6 inches wide by 24 inches long, capable of supporting grab bars, be provided behind and beside toilets. These minimal areas to be reinforced are adapted from the 1986 ANSI A117.1 Standard. However, the reinforcing should be both longer and wider so sufficient solid material is available to mount grab bars of differing lengths, mounting configurations, and designs. In fact, the Guidelines encourage longer reinforcing, as shown in the Guidelines Figure 3, “Water Closets in Adaptable Bathrooms,” where the preferred length of 42 inches for side wall reinforcing is given.

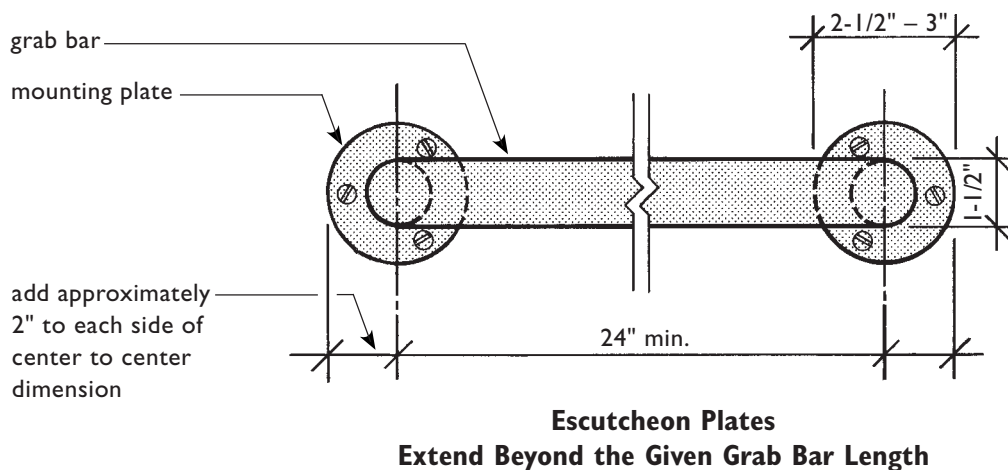
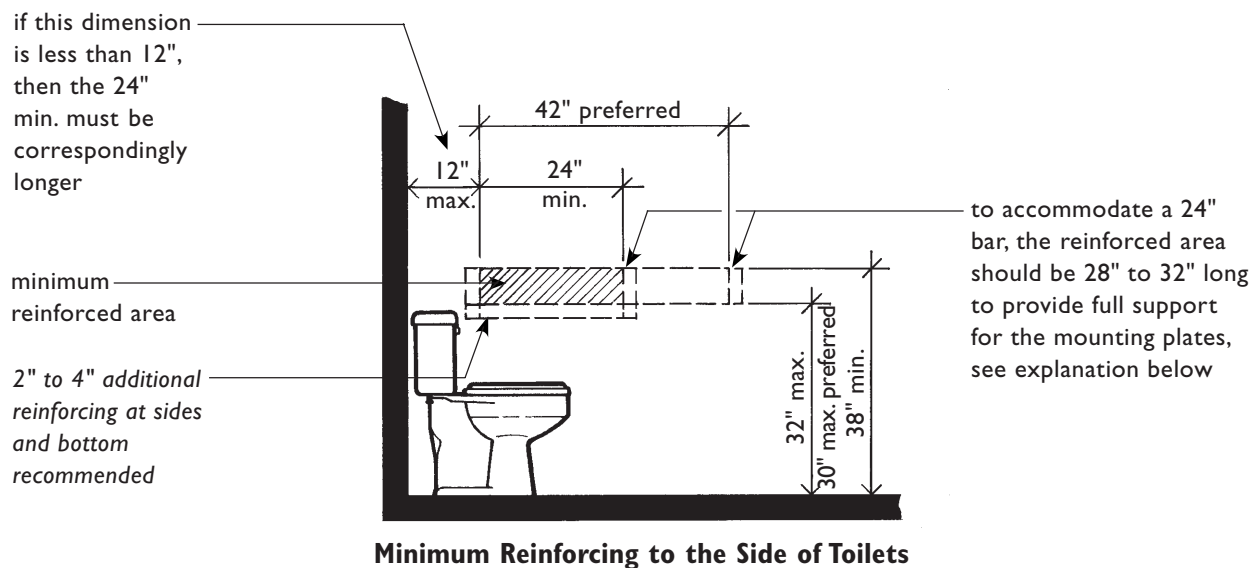
Grab bars, to be within the ranges presented in most accessibility standards, are mounted so their centerline is 33 inches to 36 inches above the floor. If the bottom of the reinforced area is at 32 inches, and a resident chooses to mount a bar at 33 inches, the mounting plates will extend below the reinforced area by 1/2 inch or more. To avoid a weak and unsafe connection, it is critical that reinforcing be enlarged.



**Minimum Reinforcing Behind Toilets  
Located Beside a Wall**

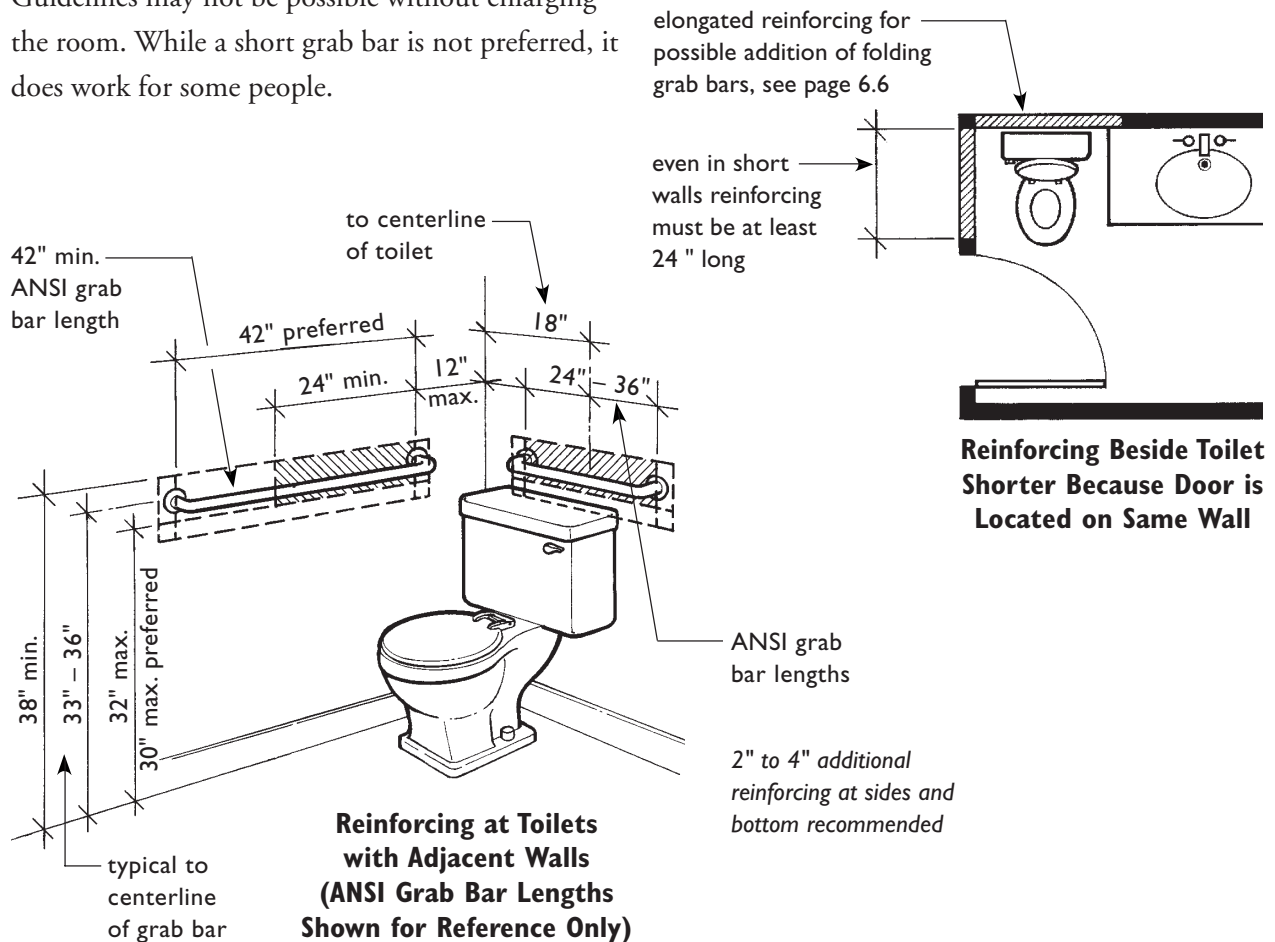
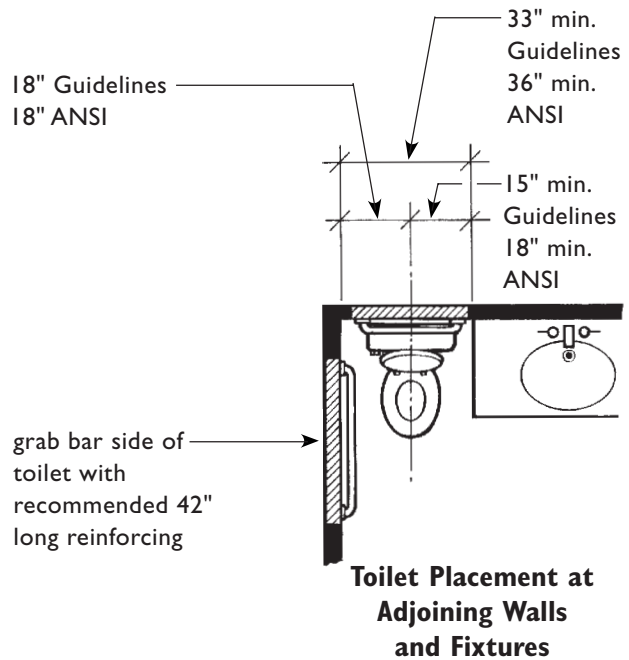
The leading edge of the reinforcing beside the toilet should be positioned at least 36 inches from the back wall to accommodate a bar that is a minimum of 24 inches long. If the reinforcing starts 6 inches from the back wall then the 24

inches of reinforcing should be increased to 30 inches minimum. Whenever a toilet is next to a wall that allows for a longer area of reinforcing (42" is preferred), the longer area should be reinforced.



Toilets positioned beside a wall offer the highest degree of safe use since a grab bar can be mounted to the side of the toilet. The dimensions describing the distance from the center of the toilet to a side wall and to the nearest fixture or obstruction on the opposite side have been adapted from the ANSI Standard. The 18 inches from the centerline of the toilet to the wall is an absolute measurement and will accommodate a grab bar and the shoulders of a person seated on the toilet. The Guidelines provide for a 15-inch minimum dimension on the nongrab bar side, which is more lenient than ANSI (which requires 18 inches minimum).

In small bathrooms where the door is located in the side wall immediately adjacent to the toilet, full length reinforcing as specified in the Guidelines may not be possible without enlarging the room. While a short grab bar is not preferred, it does work for some people.



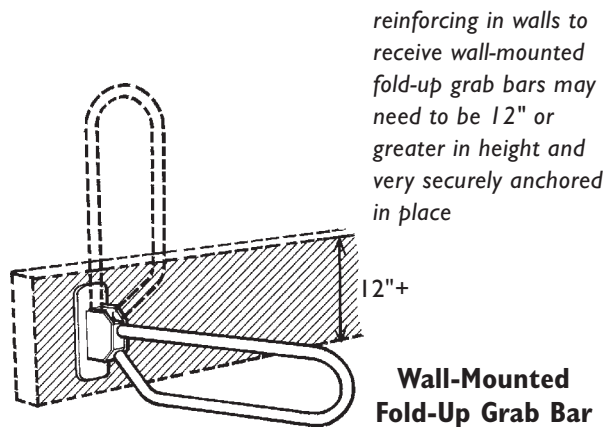
## FOLDING AND FLOOR-MOUNTED GRAB BARS AT TOILETS

The Guidelines permit the installation of folding wall-mounted, floor-mounted or wall and floor-mounted grab bars where it is not possible to install “appropriate” wall-mounted ANSI, or similar, complying grab bars. This is particularly relevant when there is no wall or a very short wall adjacent to the toilet.

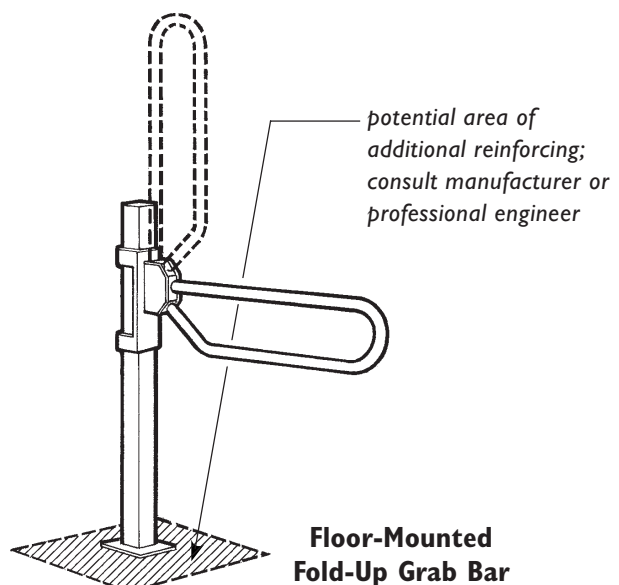
A wide variety of alternative folding grab bars are available. One of the most versatile is the bar that may be pulled down for support and folded out of the way when not needed. Although not quite as stable as the bar that is securely mounted to a wall at both ends, it provides reasonable support for some people.

Reinforcing for such folding grab bars must be substantial because of their cantilevered design. See the top illustration in the right column. For a grab bar to be floor-mounted or be hinged and mounted on the wall behind the toilet, larger areas of reinforcing in walls will be necessary and care must be taken to provide for the types of bars that will not encroach upon the necessary clear floor space at fixtures.

It is recommended that reinforcing for all types of folding grab bars be done strictly as recommended by manufacturers. Information about the exact size and location of reinforcement, and the type and size of bars the reinforcement is engineered to accommodate, should be included in the residents’ information suggested on page 6.3. See Product Resource List in Appendix A for sources of fold-up grab bars.

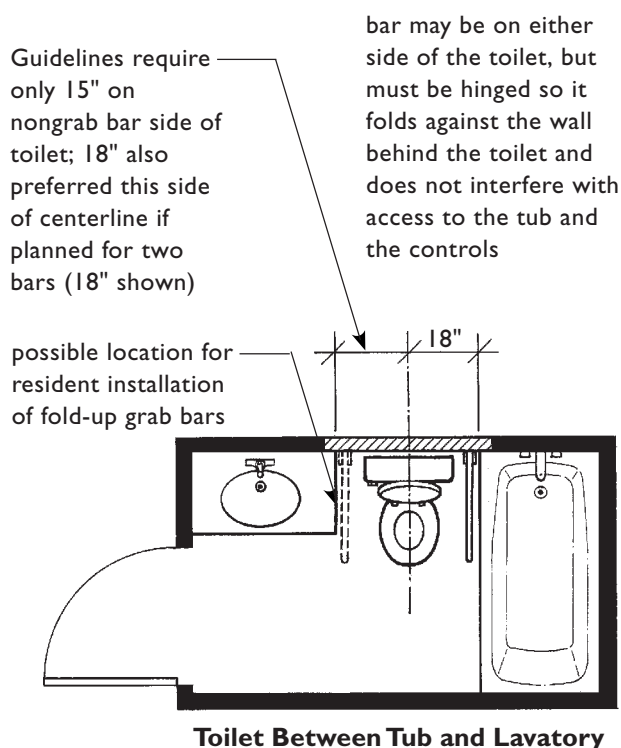
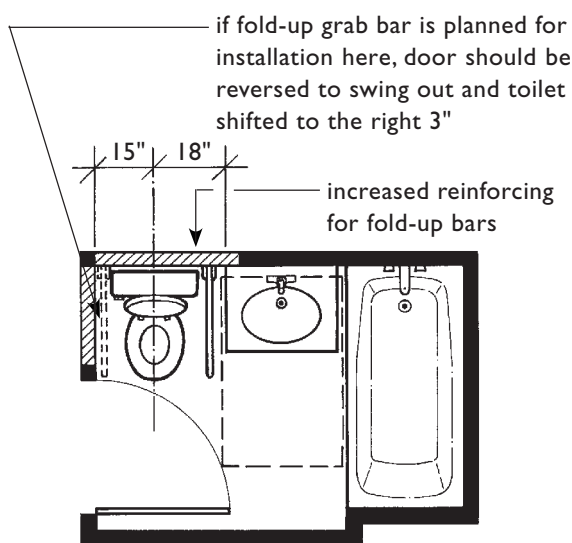
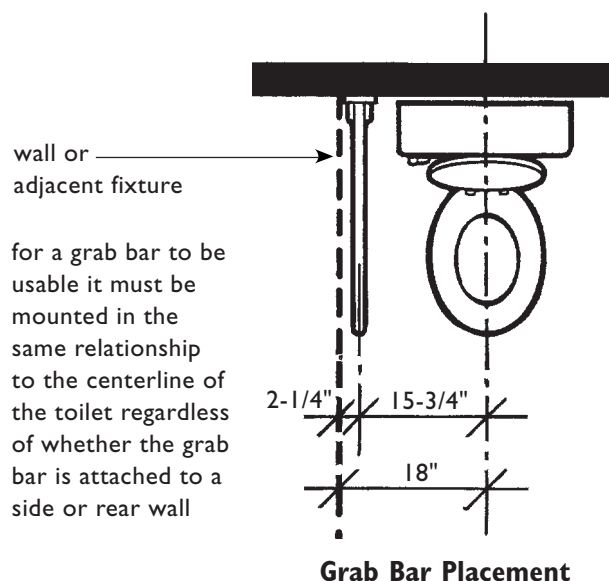


Floor-mounted fold-up grab bars, because of the stresses exerted upon them, will require an extremely secure floor connection. In frame construction, if access to the underside of the floor is available (i.e., from a crawl space or basement), necessary blocking or other reinforcing might be installed at the time the bar is installed. On concrete floor systems additional reinforcing may or may not be necessary. In either case the advice of the manufacturer and/or a professional structural engineer should be followed.



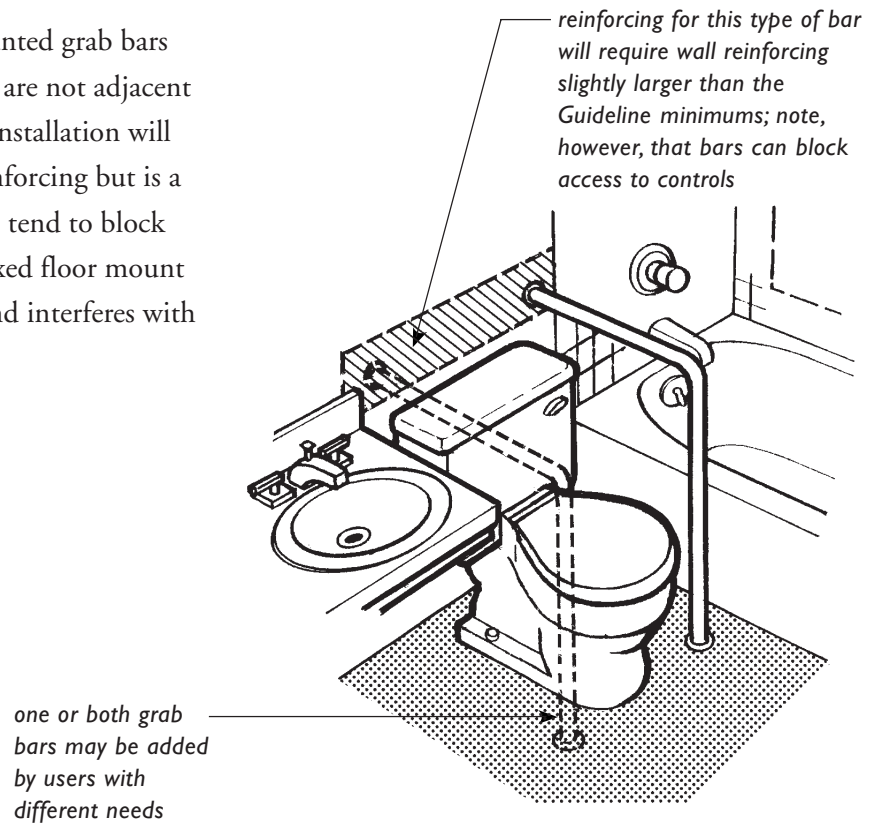
When a toilet is positioned in the room away from a side wall, grab bars must be mounted on the wall behind the toilet or be floor mounted. Reinforcing should be long and wide enough so a folding bar can be installed and, when lowered into position for use, its centerline is 15-3/4 inches from the centerline of the toilet. This dimension is consistent with the requirement that 18 inches be provided from the centerline of the toilet to the wall when that wall is to be equipped with a grab bar.

Advance planning will be necessary to determine on which side of the toilet a folding grab bar will be placed so the necessary 18 inches of space and additional reinforcing can be shifted to the grab bar side of the toilet. Although not required, it is recommended that the toilet be centered in a 36-inch space rather than the 33-inch space specified for usable bathrooms in the Guidelines. Adequate reinforcing could then run the full length behind the toilet to allow fold-up bars to be installed on either side, depending upon the needs and desires of the resident.



Recommended Locations for Fold-Up Grab Bars

Fixed floor and wall-mounted grab bars also can be installed where toilets are not adjacent to full length walls. This type of installation will require little if any additional reinforcing but is a poor choice because the grab bars tend to block access to adjacent fixtures. The fixed floor mount encroaches on clear floor space and interferes with wheelchair maneuvering.

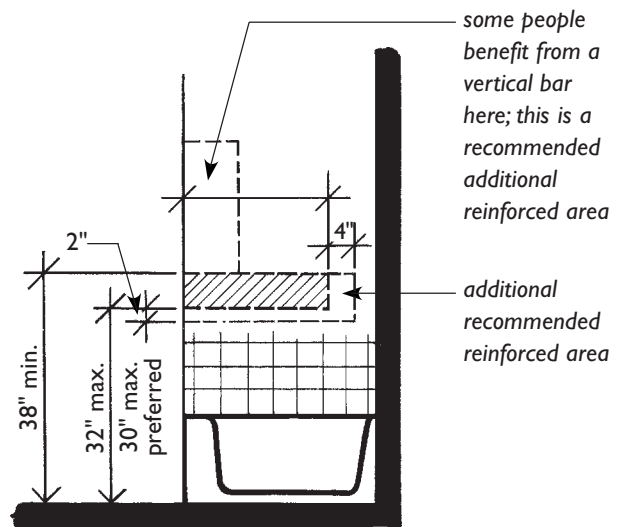


**Fixed Floor and Wall-Mounted Bars  
Not a Good Choice for Many People**

### REINFORCING FOR GRAB BARS AT CONVENTIONAL BATHTUBS

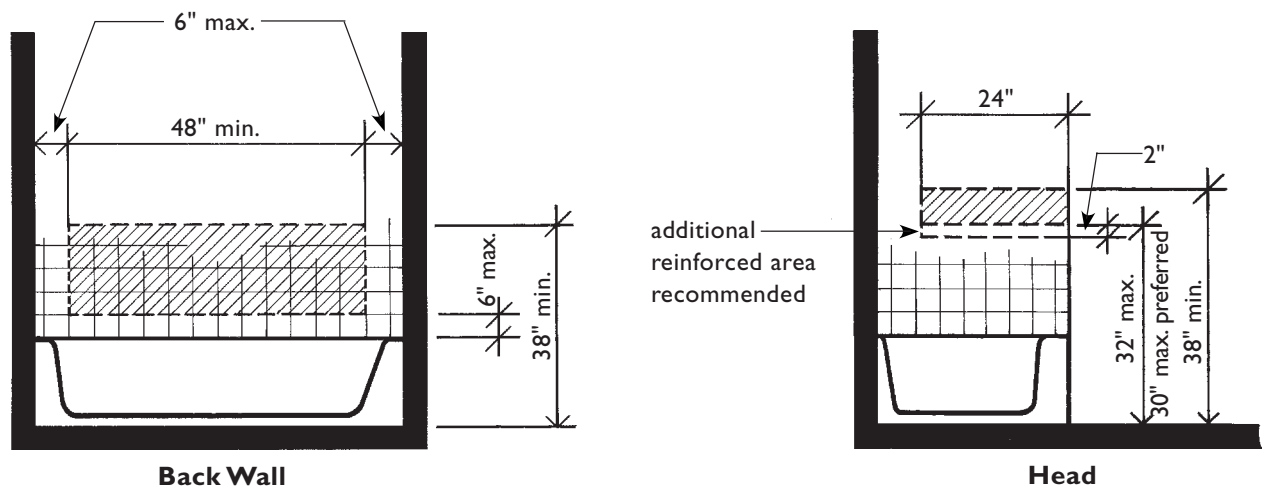
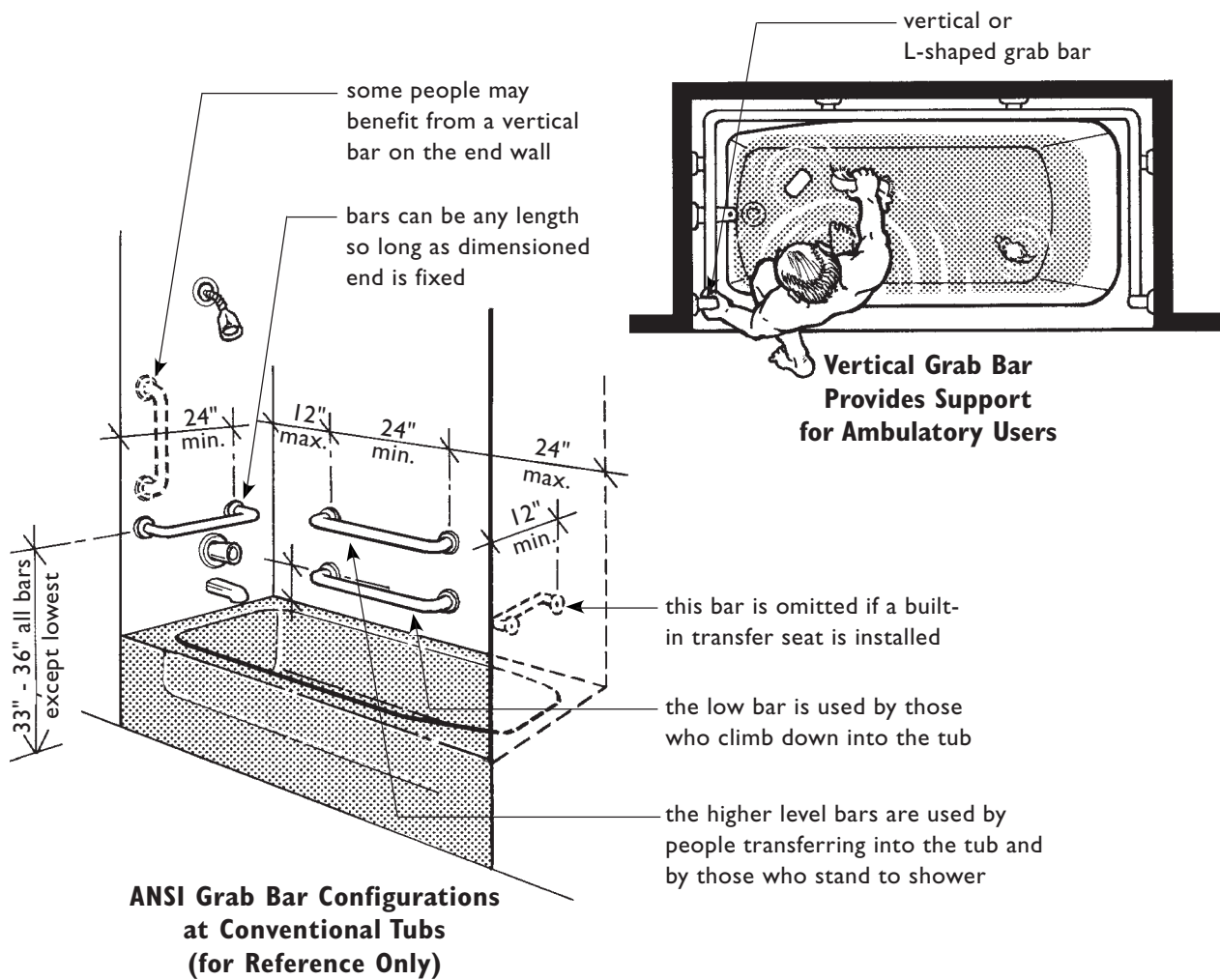
At conventional bathtubs the Guidelines specify wall reinforcing for grab bars as shown in the accompanying illustrations. The intent is to make it easy for a resident to install grab bars similar to those specified in ANSI A117.1 or other equal accessibility standard or code.

For the same reasons as discussed at toilets, the reinforced areas specified at the head and foot of tubs should be enlarged to provide full support for mounting plates and horizontal bars at the lowest position of 33" above the room floor. The enlarged reinforced areas are shown here as recommended additional reinforcing.



**Foot (Control Wall)**

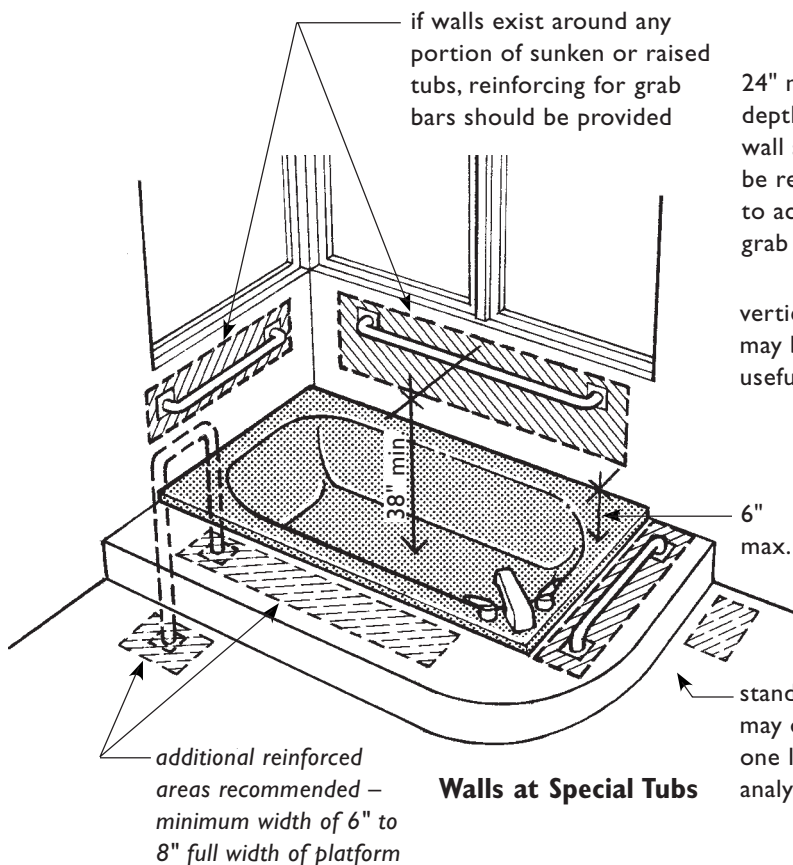
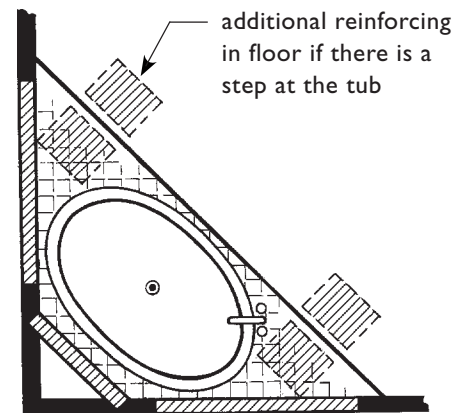
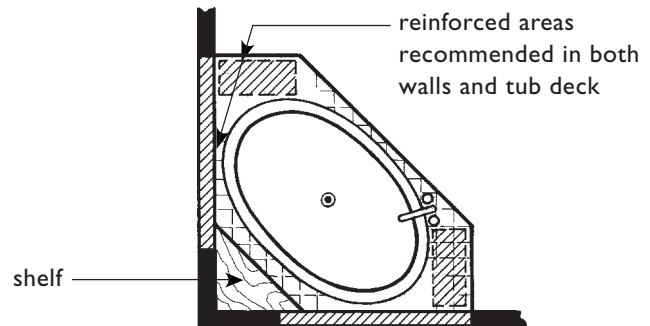
**Reinforced Areas Required by the Guidelines  
at Conventional Bathtubs**



**Reinforced Areas Required by the Guidelines at Conventional Bathtubs**

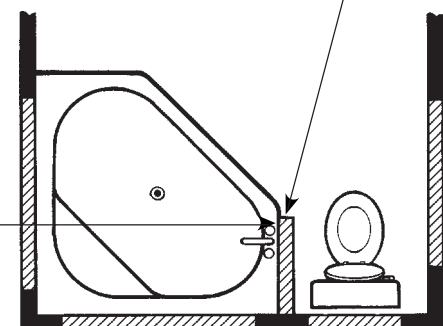
## REINFORCING FOR GRAB BARS AT Non-CONVENTIONAL BATHTUBS

The Guidelines do not limit the size or proportion of bathtubs or showers to the configurations shown. Bathtubs may have shelves or benches at either end, or may be installed without surrounding walls, provided alternative methods for mounting grab bars are made. For example, a sunken bathtub placed away from walls could have reinforced areas in the floor for installation of floor-mounted grab bars. Whenever walls are adjacent to raised or sunken tubs, reinforcing should be provided that closely matches the sizes given at conventional bathtubs.



24" max. depth wing wall should be reinforced to accept grab bars

vertical bar may be useful here



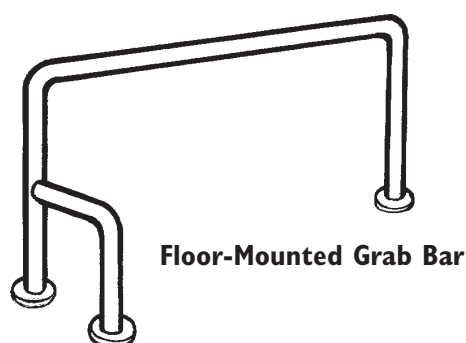
### Recommended Reinforcing for Grab Bars at Raised or Sunken Tubs

standard nonreinforced floor may or may not be able to support one leg of a handrail; engineering analysis recommended

## FLOOR-MOUNTED GRAB BARS AT SPECIAL BATHTUBS

On open sides of raised tubs having decks at tub rim level and at floors surrounding sunken tubs, the deck and other designated floor areas should be reinforced so they are structurally capable of receiving floor-mounted grab bars. The floor or deck must provide secure anchorage and such bars should withstand a 250 pound load applied in any direction and at any point. Although not required, any grab bar installation should be able to meet or exceed ANSI 4.24 Grab Bars.

Floor-mounted bars in these installations may be from 18 inches to 36 inches above the tub rim. Some have a braced double-footed mount as shown here.

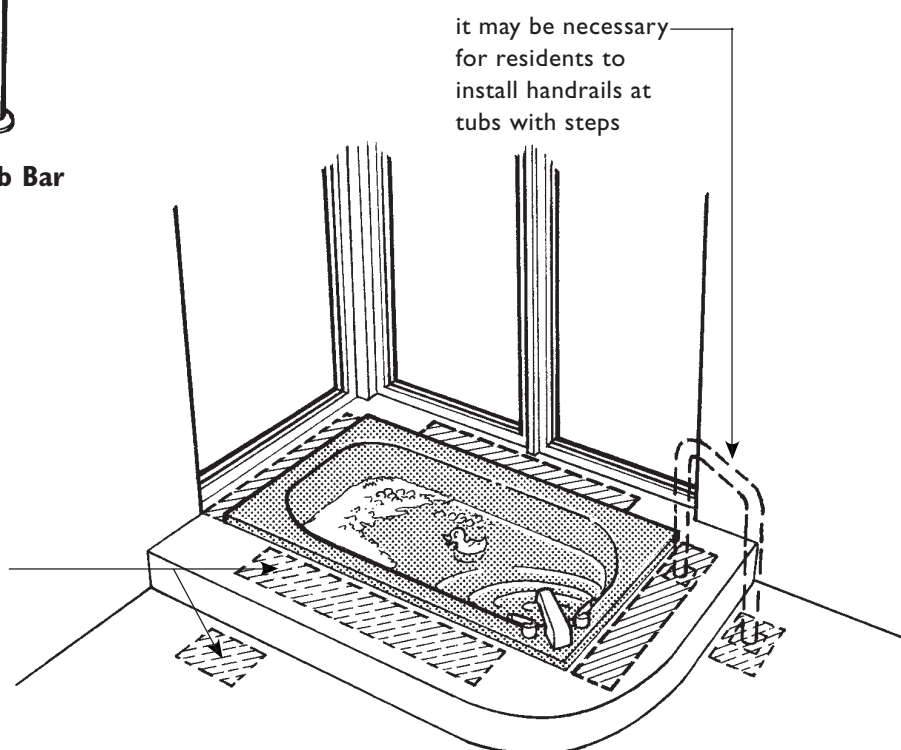


**Floor-Mounted Grab Bar**

*additional reinforced areas recommended – minimum width of 6" to 8" full width of platform*

If designated reinforced floor areas are to be provided, their size should be comparable in length to those required for conventional bathtubs, or proportionally longer if the bathtub is larger than a conventional bathtub. The width of the reinforcing may well need to be wider than other reinforced areas for sufficient strength and space to accept the braced double-footed mounts described above.

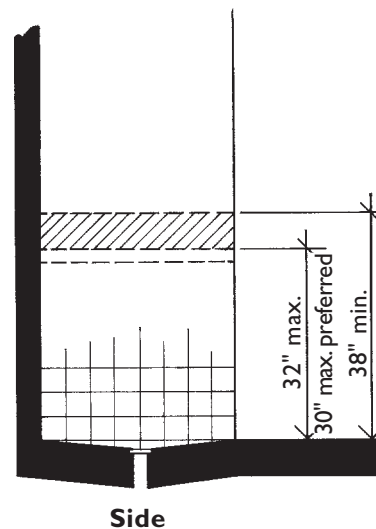
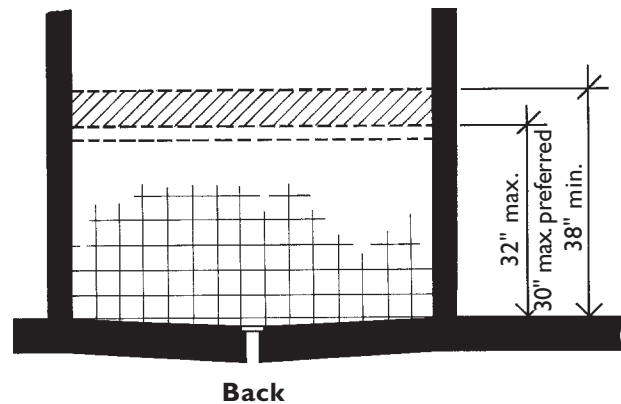
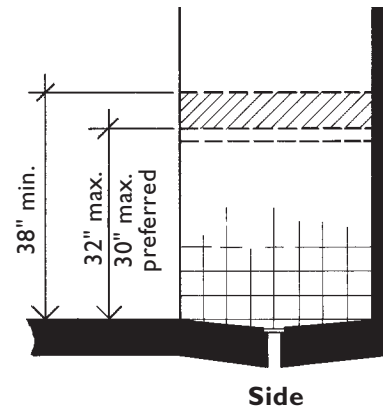
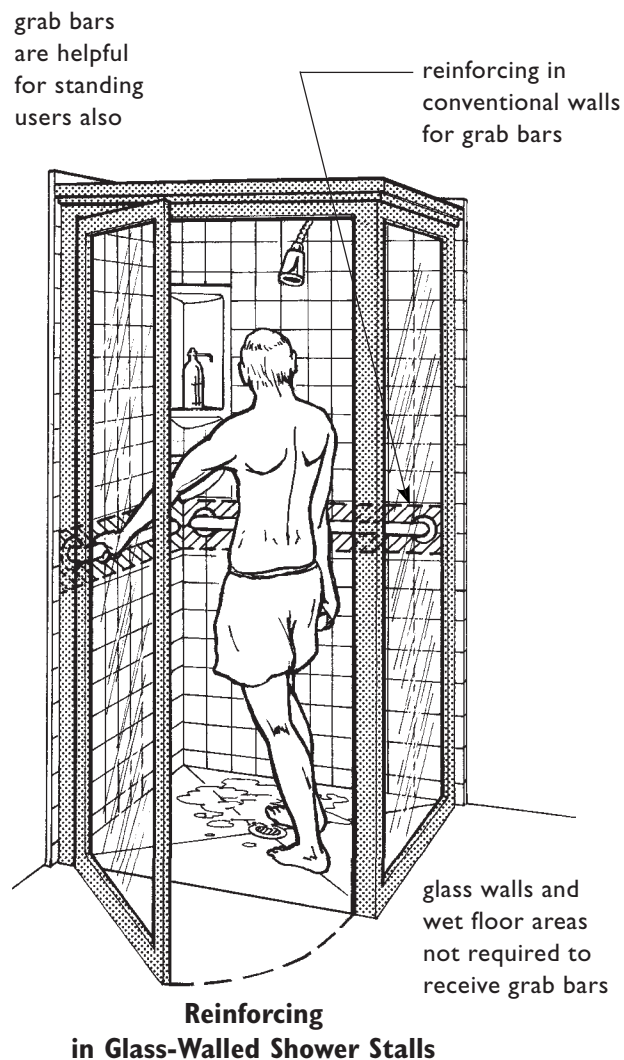
The size and exact location of designated reinforced floor areas should be included in the permanent affixed tenant information for installing grab bars recommended at the beginning of this chapter. The builder/owner/manager also may want to include in that information the height, type of fasteners, type of bar and mount, or even the model number and manufacturer of the bars upon which the adequacy of the structure was engineered.



**No Structural Walls at Special Tubs**

## REINFORCING FOR GRAB BARS AND SEATS AT SHOWERS

In glass shower stalls, only those walls that are solid construction, i.e., wood or metal studs with gypsum wallboard and/or tile or solid masonry, must have reinforced areas. Glass walls are not required to be reinforced, nor are shower stalls required to have the waterproof pan or floor seal pierced to receive screws/bolts for floor-mounted grab bars.



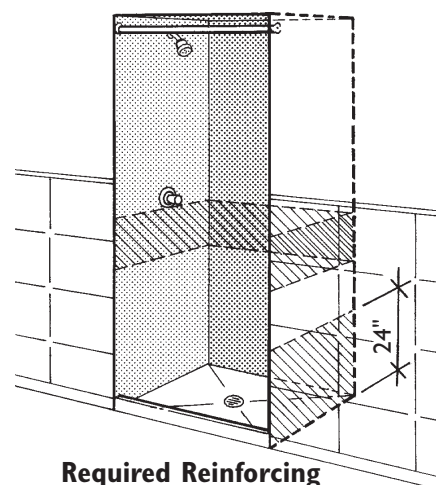
**Minimum Reinforcing for Grab Bars in Showers**

Shower stalls in covered dwellings may be any size or configuration unless they are the only bathing fixture provided in the dwelling unit or on the entry level of a multistory dwelling in a building with one or more elevators. (See clear floor space at shower stalls in Chapter 7, Part B: “Usable Bathrooms.”) Reinforcing for grab bars must be at the height shown in the illustrations on the preceding page and extend the full width of both side walls and the back wall. If shower walls curve, reinforcing must still be provided.

Because of the commonly accepted need to install horizontal grab bars between 33 and 36 inches above the floor, it is recommended that this reinforcing be enlarged so the bottom edge is 30 inches above the floor as explained previously at toilets and tubs.

There are certain situations where the shower stall is required to have reinforcing for later installation of a wall-hung bench seat. When this is required is addressed in Part B of Chapter 7, “Usable Bathrooms.” Reinforcing is required in a shower stall that measures a nominal 36 inches x 36 inches. The reinforcing is located on the wall opposite the controls and must run the full width of the stall, starting at the floor, to a minimum height of 24 inches.

HUD encourages builders to refer to the ANSI Standard or local codes for specifications on grab bars and wall-hung shower benches. The ANSI specified shower seat is an excellent design for safe use by people with disabilities. The builder should attempt to locate several manufacturers and size the reinforced area for the seat to accommodate more than one model. See Product Resource List in Appendix A. Information detailing reinforced areas and location, as well as product choices, should be included in the permanently affixed resident information recommended at the beginning of this chapter.

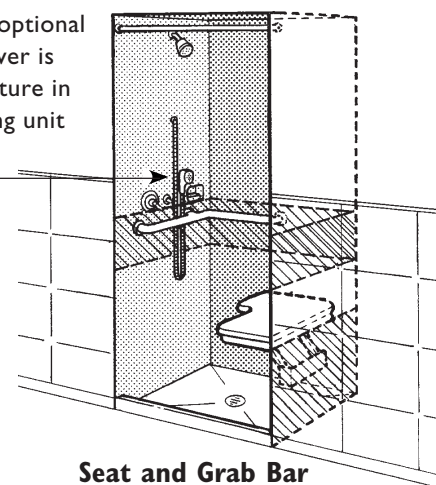


**Required Reinforcing  
When Shower is Only  
Bathing Fixture**

reinforcing for optional  
seat when shower is  
only bathing fixture in  
covered dwelling unit

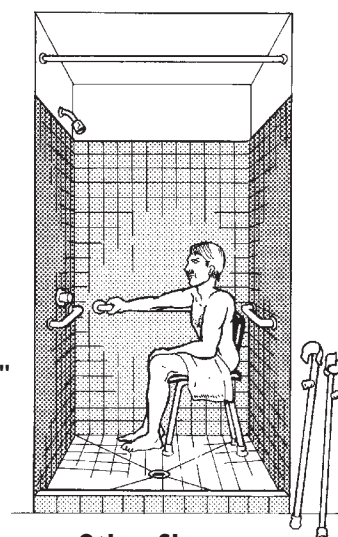
optional  
hand-held  
shower

17"-19", typical  
seat height as  
specified in  
ANSI



**Seat and Grab Bar  
in 36" X 36" Shower**

32" X 48"  
shower



**Other Shower  
Configurations Permitted**

## RECOMMENDED REINFORCING METHODS

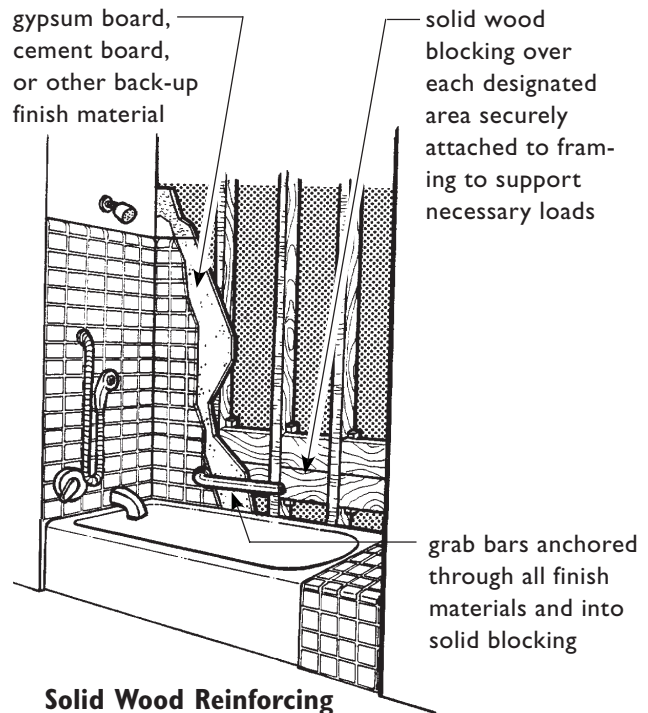
The Guidelines do not prescribe the type of material to use or methods for providing reinforcement at bathroom walls. Grab bar reinforcing may be accomplished in a variety of ways, some of which are suggested below.

### LIMITED AREA REINFORCING WITH SOLID WOOD BLOCKING

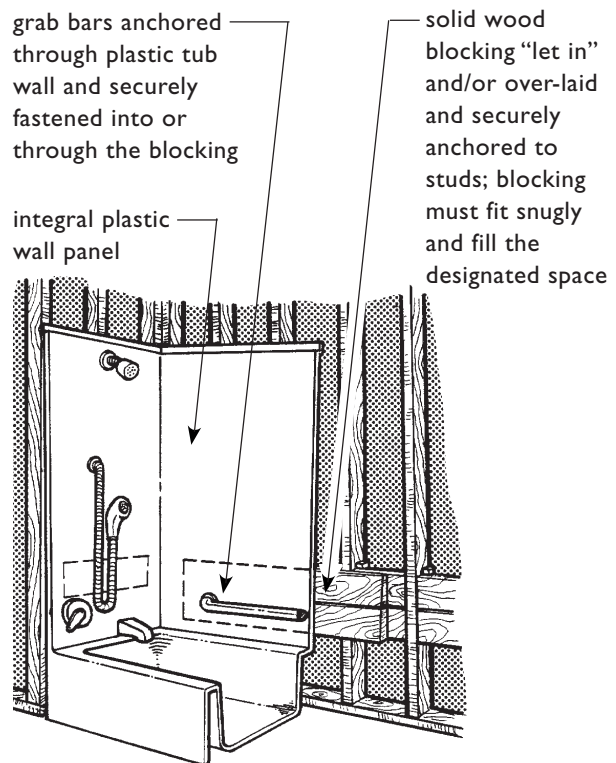
**Stud Wall.** In wood frame construction, the mounting area for grab bars can be reinforced by installing solid wood blocking either between or “let into” the studs and fastening the blocking securely to the studs. In either way, the solid wood reinforcing is installed flush with the face of the stud so finish materials can be applied to the studs and blocking in the normal manner.

**Molded Fixtures.** Fiberglass and acrylic bathtubs and showers with integral wall panels are common in both new construction and remodeling. The panels alone are too thin to support grab bars, and because they do not touch the stud wall except at the top, there is a space between the panel and the stud wall. To attach grab bars to these surfaces, an area of solid wood blocking or other solid substance must be installed in the cavity between the fiberglass or acrylic wall and the wall.

Since the space between the panels and the stud wall gets narrower as it approaches the top of the panels where they are fastened to the studs, this blocking must be cut to fit snugly in the space between the studs and the panel. The blocking must contact the plastic panel over the entire reinforced area.



**Solid Wood Reinforcing  
on Wood Stud Walls**



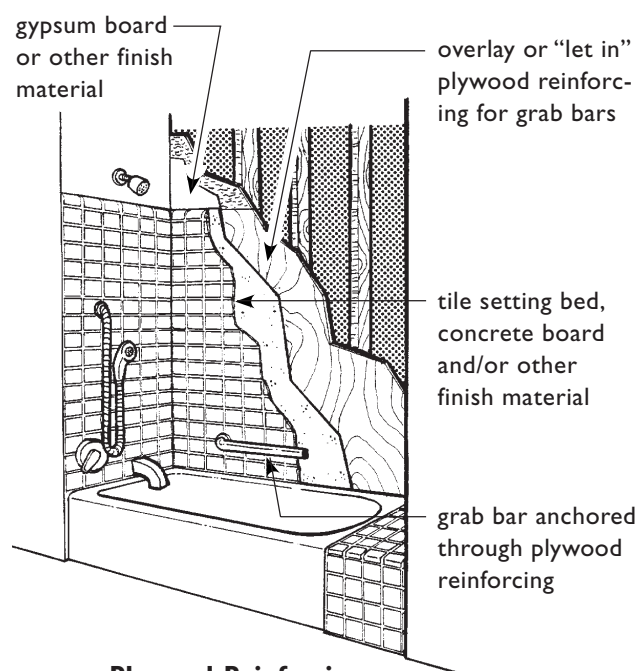
**Reinforcing for Grab Bars  
Behind Fiberglass or Acrylic Tub  
and Shower Surrounds**

Some fiberglass and acrylic tubs, showers, and wall sections are now made with reinforcing already in the walls to stiffen the fixture. If the reinforced fiberglass or acrylic wall is not specifically labeled as built for grab bars and meeting the ANSI load requirements, then additional reinforcing may need to be installed.

### WHOLE WALL OR LARGE AREA REINFORCING WITH PLYWOOD

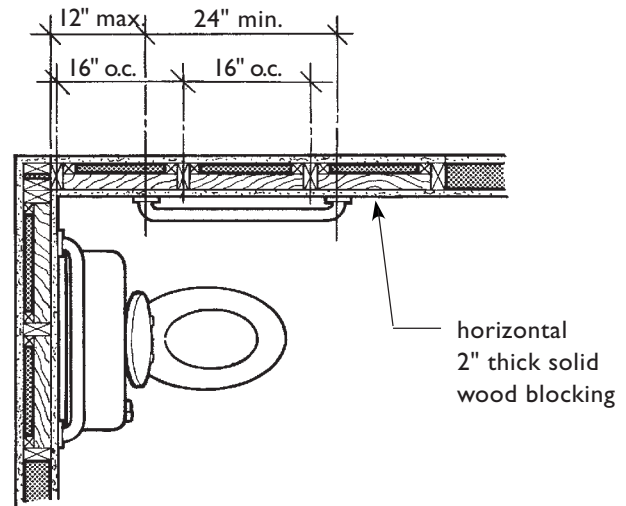
Although the location and the limited size of the wall areas that must be reinforced are specified by the Guidelines, it may be necessary or desirable to extend the reinforcing over a larger area or throughout the entire wall. Some people may want to locate grab bars in areas other than those specified in the Guidelines and other accessibility standards. Other people may have difficulty finding the minimum reinforced wall areas concealed inside a finished wall and install the grab bars in an unreinforced area. A larger reinforced area provides greater flexibility in placement and easier installation of grab bars.

Heavy plywood applied to the studs over a larger area can support grab bars and provide a base for the installation of finish materials such as ceramic tile or plastic wall panels. Plywood can be applied to the face of studs or “let in.” In either case the plywood must be of sufficient thickness and should be securely attached to withstand the forces specified in ANSI 4.24, or an equivalent or stricter standard. Anchors for securing the grab bars to the reinforced walls should be through-the-wall type or another type capable of meeting the ANSI force requirements.



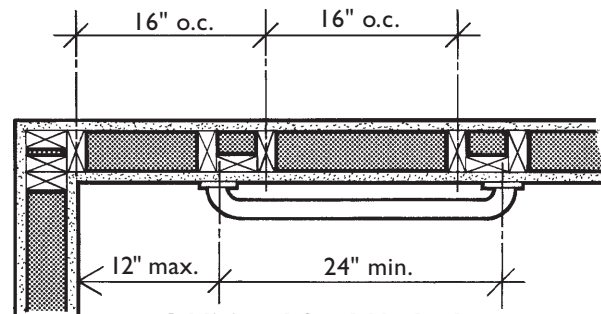
**Plywood Reinforcing  
on a Wood or Metal Stud Wall**

Because of standard stud spacing, reinforced areas often will have to be longer than specified to support necessary blocking.



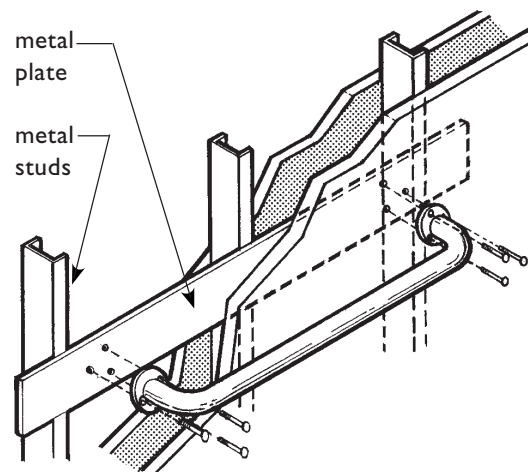
**Plan View of Extended Horizontal Blocking  
Between Conventional Wood Studs**

Additional vertical studs can be placed at ends of each specified reinforced area. This method is more expensive, difficult to install accurately, and more difficult to find after construction. It provides less flexibility in bar placement and is more likely to result in a weak connection.



**Additional Stud Method  
of Reinforcing for Grab Bars**

A manufactured, formed metal reinforcing plate can be spot welded or screwed to studs.



**Reinforcing at Metal Studs**

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## Chapter Seven:

### REQUIREMENT 7

Usable Kitchens and Bathrooms

- **PART A:** Usable Kitchens
- **PART B:** Usable Bathrooms

7



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■ **PART A: Usable Kitchens**

**7a**



*...covered multifamily dwellings with a building entrance on an accessible route shall be designed and constructed in such a manner that all premises within covered multifamily dwelling units contain usable kitchens...such that an individual in a wheelchair can maneuver about the space.*

**Fair Housing Act Regulations, 24 CFR 100.205**

counters may be at the standard height of 36" (counter height of 34" as shown in Fig. 2(c) of the Guidelines does not apply)

*lever hardware, although preferred and more usable by everyone, is not required*

kitchens in covered units must be on an accessible route and have door openings at least 32" clear to allow passage; see Chapter 4 "Usable Doors" and Chapter 5 "Accessible Route"

outlet located beyond reach of seated person permitted if other outlets in accessible locations are provided, see Chapter 6 "Switches, Outlets, and Controls"

ranges and cooktops may have front-, rear-, or side-mounted controls; *for safety reasons and ease of use, front- or side-mounted controls are preferred*

adequate space within the kitchen to provide 30" X 48" clear floor space at each fixture and appliance

***Notes in italic type are recommendations only and are not required by ANSI or Guidelines.***

in U-shaped kitchens, if less than 60" between the two legs of the U, then sink base must be removable, see page 7.12

### Guideline Specifications for Kitchens

## INTRODUCTION

Kitchens that comply with the Fair Housing Accessibility Guidelines (the Guidelines) can be designed to look and function like conventional kitchens typically found in multifamily housing. The Guidelines specify that three specific requirements must be provided to allow people who rely on mobility aids to “use” the kitchen. “Usable” kitchens, as specified in the Guidelines, are not necessarily “accessible” kitchens, but they do provide maneuvering space for a person who uses a wheelchair, scooter, or walker to approach and operate most appliances and fixtures.

The Guidelines 1) specify minimum clear floor spaces at fixtures and appliances, 2) define minimum clearance between counters, and 3) provide additional specifications when a U-shaped kitchen is planned. Wheelchair turning spaces, described in accessibility standards, are not required in kitchens that meet the Guidelines, except in some U-shaped kitchens, see page 7.9.

Additional supplemental design information, presented in *italic type*, is offered for designers/builders who may wish to increase the accessibility of dwelling units. This supplemental information is not required by HUD, the Fair Housing Act, or the Guidelines.

## CLEAR FLOOR SPACE AT FIXTURES AND APPLIANCES

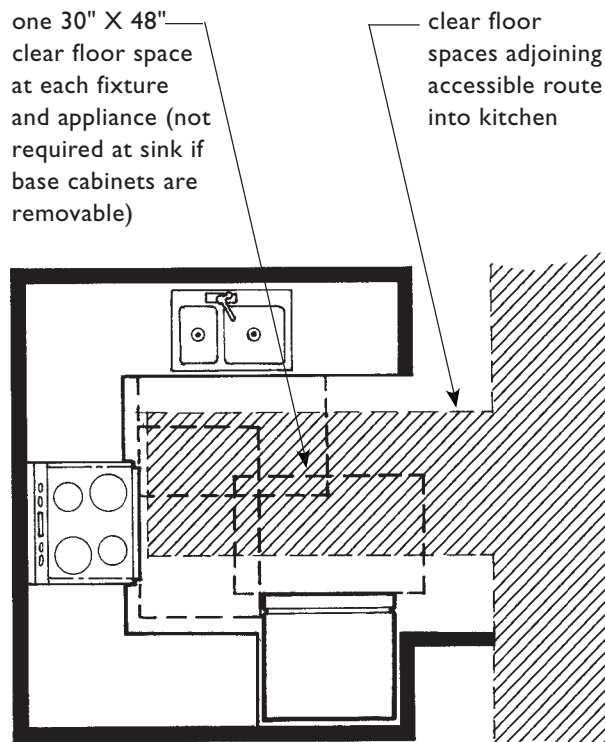
The Guidelines specify that a 30-inch x 48-inch clear floor space be provided at each kitchen appliance or fixture, and that each of these clear floor spaces adjoin the accessible route that must pass into and through the kitchen. It is anticipated that in any conventional kitchen plan, the overlapping of the minimum 36-inch wide accessible route with the clear floor spaces at all fixtures and appliances provides the necessary maneuvering space to make it possible for a person using a mobility aid to approach, and then position himself or herself close enough to use the fixture safely.

The clear floor space must be positioned either parallel or perpendicular to and centered on the appliance or fixture, i.e., the clear floor space must have its centerline aligned with the centerline of the fixture or appliance. This centered position is most critical at corners where an appliance may have to be pulled away from the corner to allow a full centered approach. The two types of approaches and where they are necessary are described on the following pages.



30" X 48"  
clear floor space

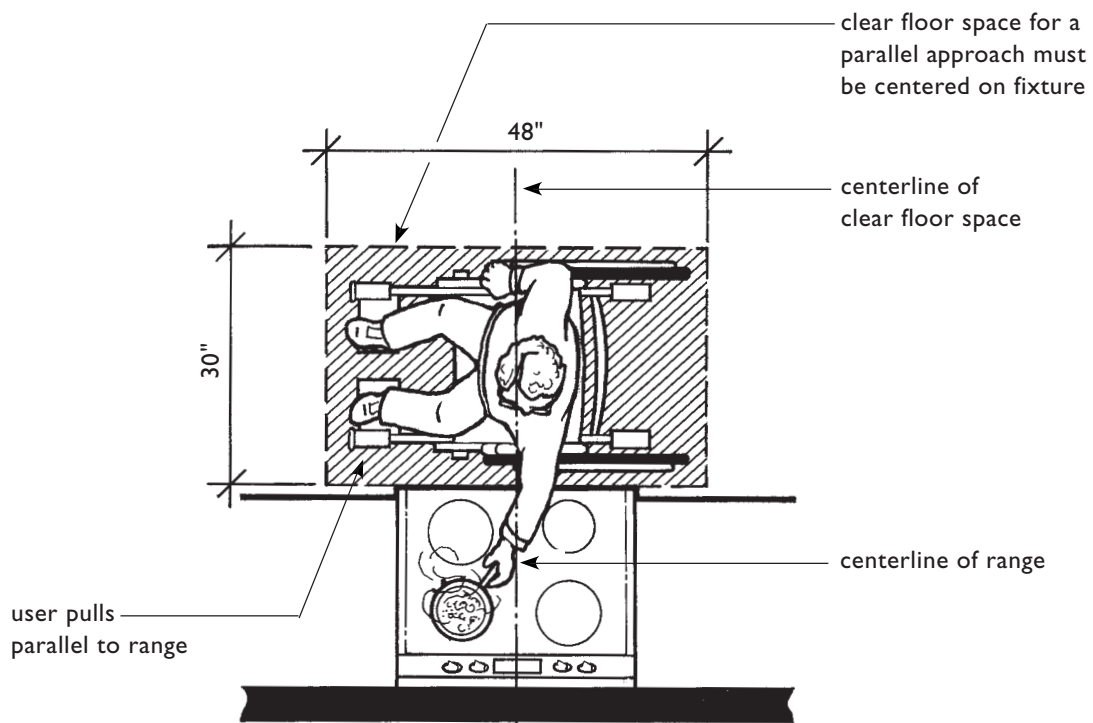
**Clear Floor Space for Wheelchair  
Parking at Appliances and Fixtures**



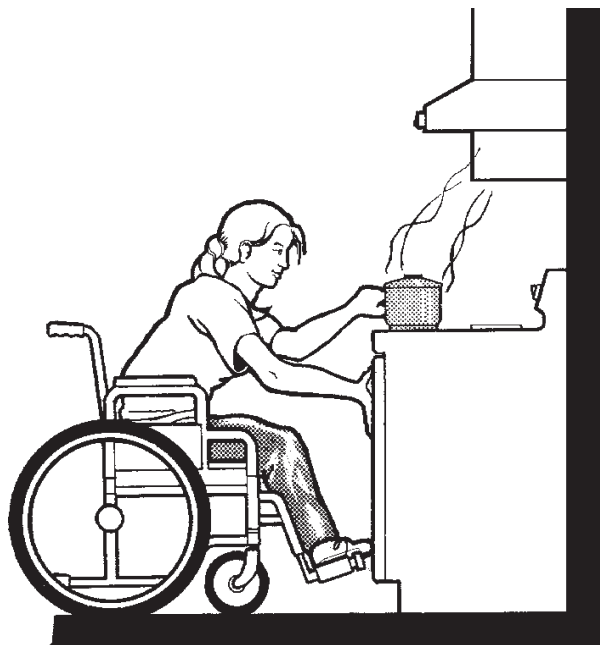
**Overlapping Clear Floor Spaces and Accessible Route Provide Maneuvering Space**

## CLEAR FLOOR SPACE AT RANGES, COOKTOPS, AND SINKS

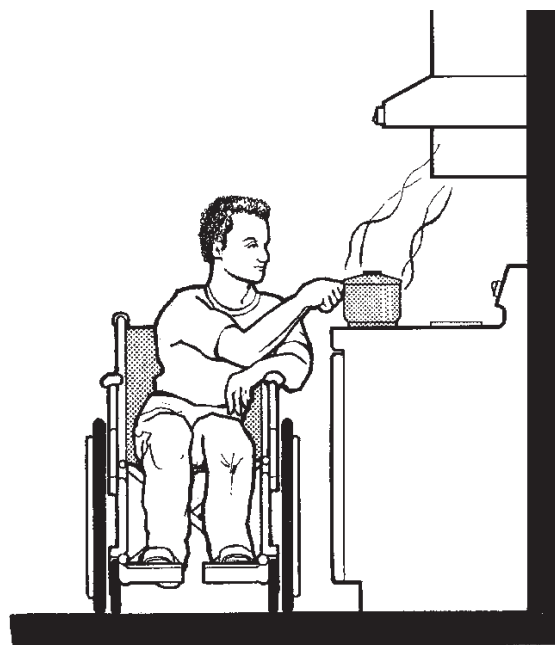
Unless knee space is provided, space to execute a parallel approach must be provided at ranges, cooktops, and sinks. The clear floor space in this parallel orientation allows the wheelchair user to make a close side approach permitting safer and easier reach to controls and cooking surfaces. A forward approach, on the other hand, is difficult and unsafe, especially when controls are located at the back, because it requires seated users to lean forward over their feet and knees to reach not only hot pots and pans but the controls as well. See pages 7.11 through 7.16 for required clear floor space at cooktop or sink when knee space is provided.



**Space for Parallel Approach Required at Range and Cooktop**



**Forward Approach at Range  
is Difficult and Unsafe**

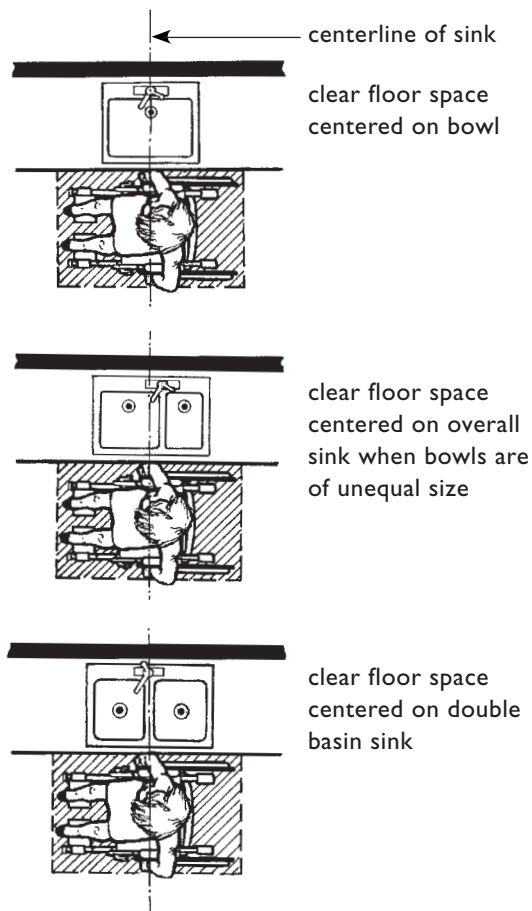


**Parallel Approach to Range  
Specified in Guidelines**

A **parallel** approach also must be provided at sinks so a seated user can reach down into the bowl. A forward approach with kneespace below the sink may be required in some very small U-shaped kitchens. See page 7.11.

The parallel clear floor space at sinks, as at ranges and cooktops, must be centered on the bowl or appliance. At single bowl sinks the centerline of the clear floor space must align with the centerline of that bowl. Where there are multiple bowl sinks the clear floor space must be centered on the overall sink itself.

Faucets usually are placed at the center of or within six inches of the center of the sink, regardless of the number of basins. Since the clear floor space is centered on the sink, users are still afforded access to faucet controls.



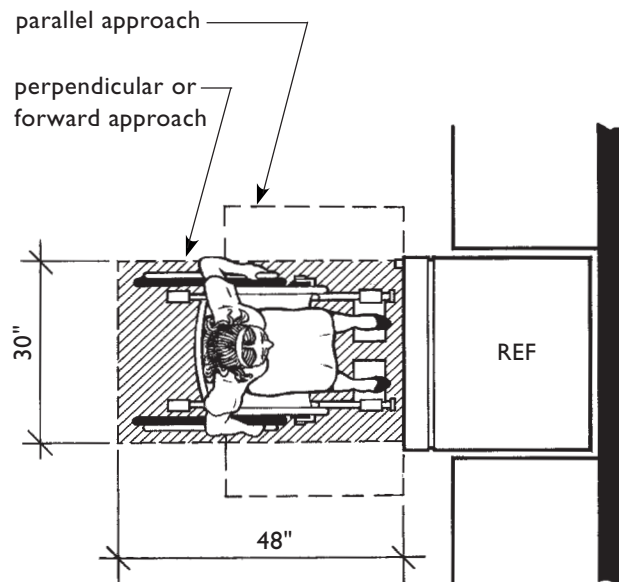
**Space for Parallel Approach Required at Sinks**

## CLEAR FLOOR SPACE AT OVENS, DISHWASHERS, REFRIGERATORS, FREEZERS, AND TRASH COMPACTORS

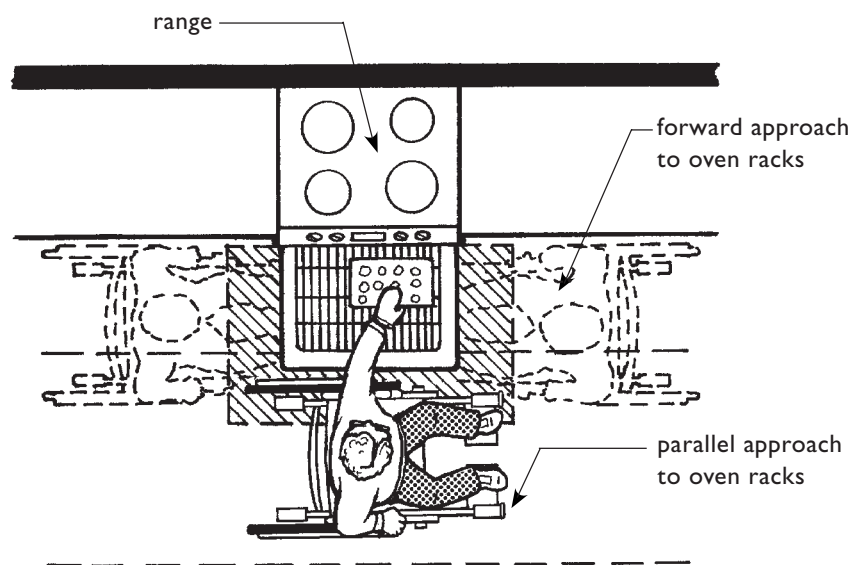
The 30-inch x 48-inch clear floor space oriented in either one of two positions—parallel or perpendicular—is required at the oven, dishwasher, refrigerator, freezer, and trash compactor. Wall-mounted and microwave ovens, like ovens in ranges, also must have either a parallel or perpendicular clear floor space adjacent to the appliance.

Even though this group of appliances has operable doors that require the user to be able to get out of the way of the door swing, for purposes of design and room layout the clear floor space must be centered on the appliance itself. However, the clear floor space for the specific appliance and the clear floor space for adjacent appliances and fixtures, combined with the 36-inch wide accessible route into the room, provide the functional space necessary to open a door and maneuver close to the appliance to be able to reach into it.

clear floor space for at least one type of approach (forward or parallel) must be centered on the refrigerator; this applies to side-by-side as well as over/under models



**Space for Either a Forward or Parallel Approach Must be Provided**

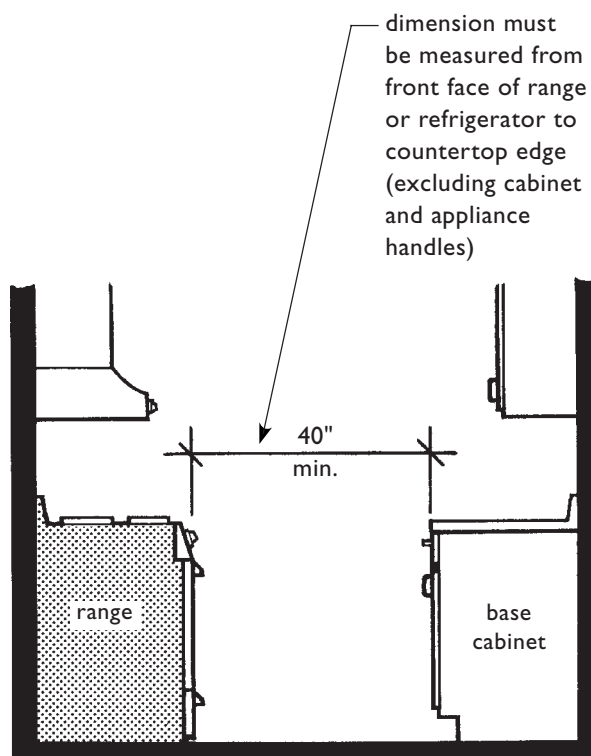


**Functional Use of Oven  
Could Be From Any One of These Positions**

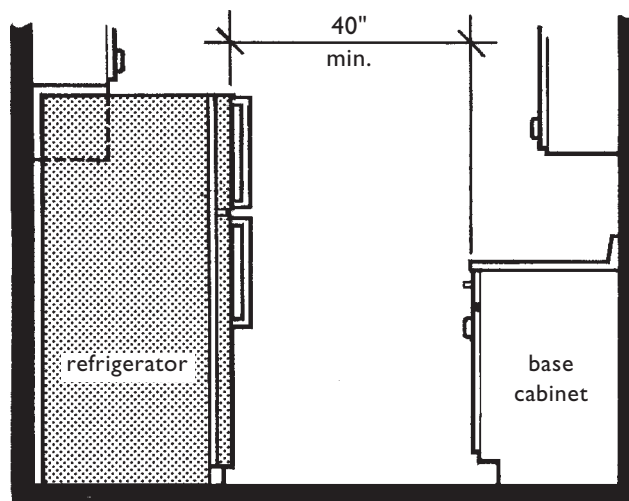
## CLEARANCE BETWEEN COUNTERS AND ALL OPPOSING ELEMENTS

The Guidelines require a clearance of at least 40 inches between all opposing base cabinets, countertops, appliances, and walls. The 40-inch clearance is measured from any countertop or the face of any appliance (excluding handles and controls) that projects into the kitchen to the opposing cabinet, countertop, appliance, or wall.

Refrigerators vary greatly in depth and may extend up to eight inches beyond cabinet faces. Standard free-standing and drop-in ranges may project up to three inches. Appliance depths (excluding door handles) must be included when calculating the 40-inch clearances.

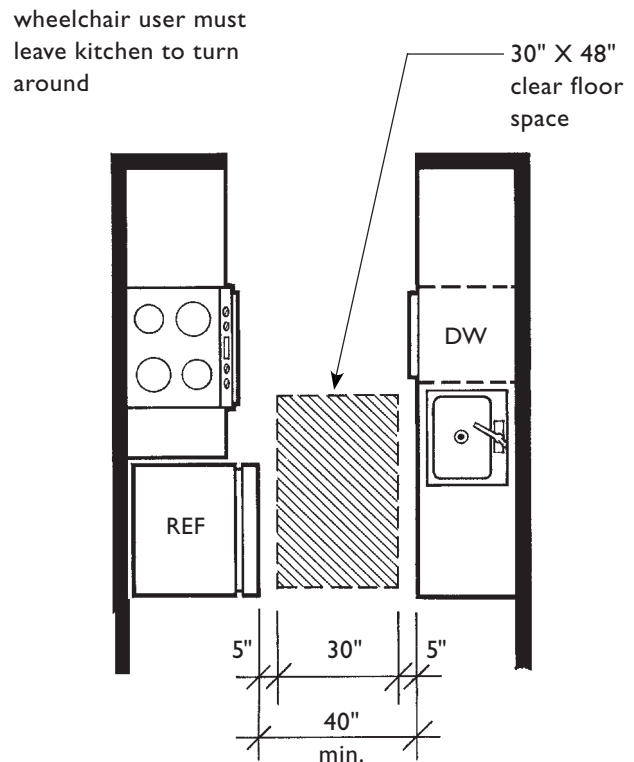


**Minimum Clearance between Range  
and Opposing Base Cabinet**



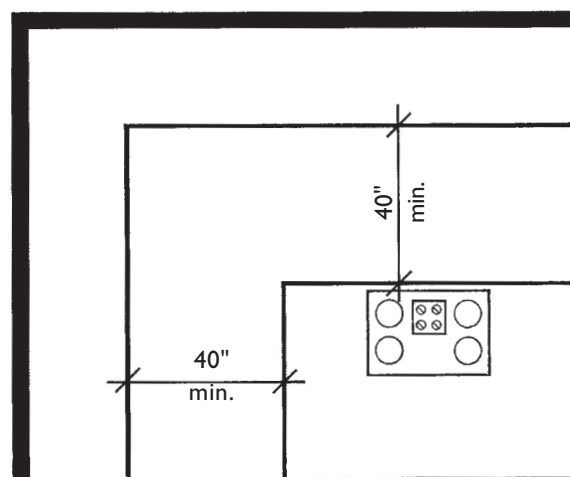
**Minimum Clearance between Refrigerator  
and Opposing Base Cabinet**

In a narrow kitchen the 40-inch minimum clearance provides an additional five inches on either side of the required clear floor space of 30 inches x 48 inches at each fixture or appliance, so a user in a wheelchair can maneuver as close as possible to appliances or fixtures. A narrow kitchen such as the one shown to the right meets the Guidelines and is usable, but may be difficult for many people using wheelchairs. Its narrow corridor design requires a user in a wheelchair to exit the kitchen to turn around.



**40" Minimum Clearance Between all Counters, Base Cabinets, Appliances, and Walls**

In more elaborate kitchens where an island is planned, the 40-inch clearance must be maintained between the face of the island and all opposing features. Even though an accessible route for a 90-degree turn around an obstruction is 36 inches, to ensure sufficient space for maneuvering within the kitchen, the Guidelines require that the minimum clearance of 40 inches be maintained.



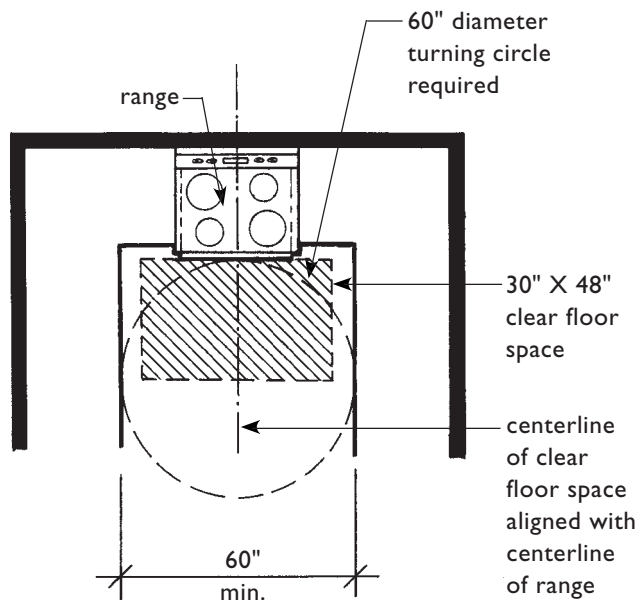
**40" Must Be Maintained Between Island and all Opposing Features**

## U-SHAPED KITCHENS

A 60-inch diameter turning circle is required in a U-shaped kitchen that has a sink, range, or cooktop at its base. This turning diameter is necessary to provide adequate maneuvering space for a person using a wheelchair to approach and position themselves parallel to the appliance or fixture at the base of the U. Any appliances, such as refrigerators and ranges (excluding door handles), that project beyond countertops and cabinets must not encroach upon this 60-inch diameter turning space.

In addition to the turning space, the kitchen must be arranged so there is a 30-inch x 48-inch clear floor space for a parallel approach centered on the sink, range, or cooktop. The centerline of the fixture or appliance must be aligned with the centerline of the clear floor space.

When a sink, even a standard single basin sink, is at the bottom of the U and a dishwashing machine is planned to be included adjacent to the sink, the distance between the legs of the U must be greater than 60 inches to allow for a full centered approach at the sink. See the lower plan in the right column.

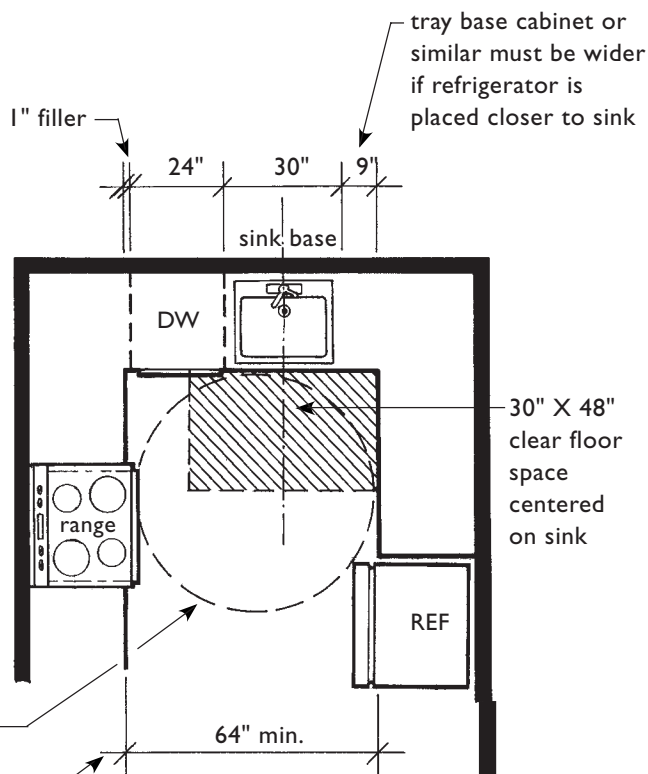


**60" Diameter Turning Circle when Sink (Only), Cooktop, or Range is at Bottom of U-Shaped Kitchen**

refrigerator must be selected and positioned so it does not encroach upon the 60" diameter turning circle or the clear floor space at the sink

60" diameter turning circle

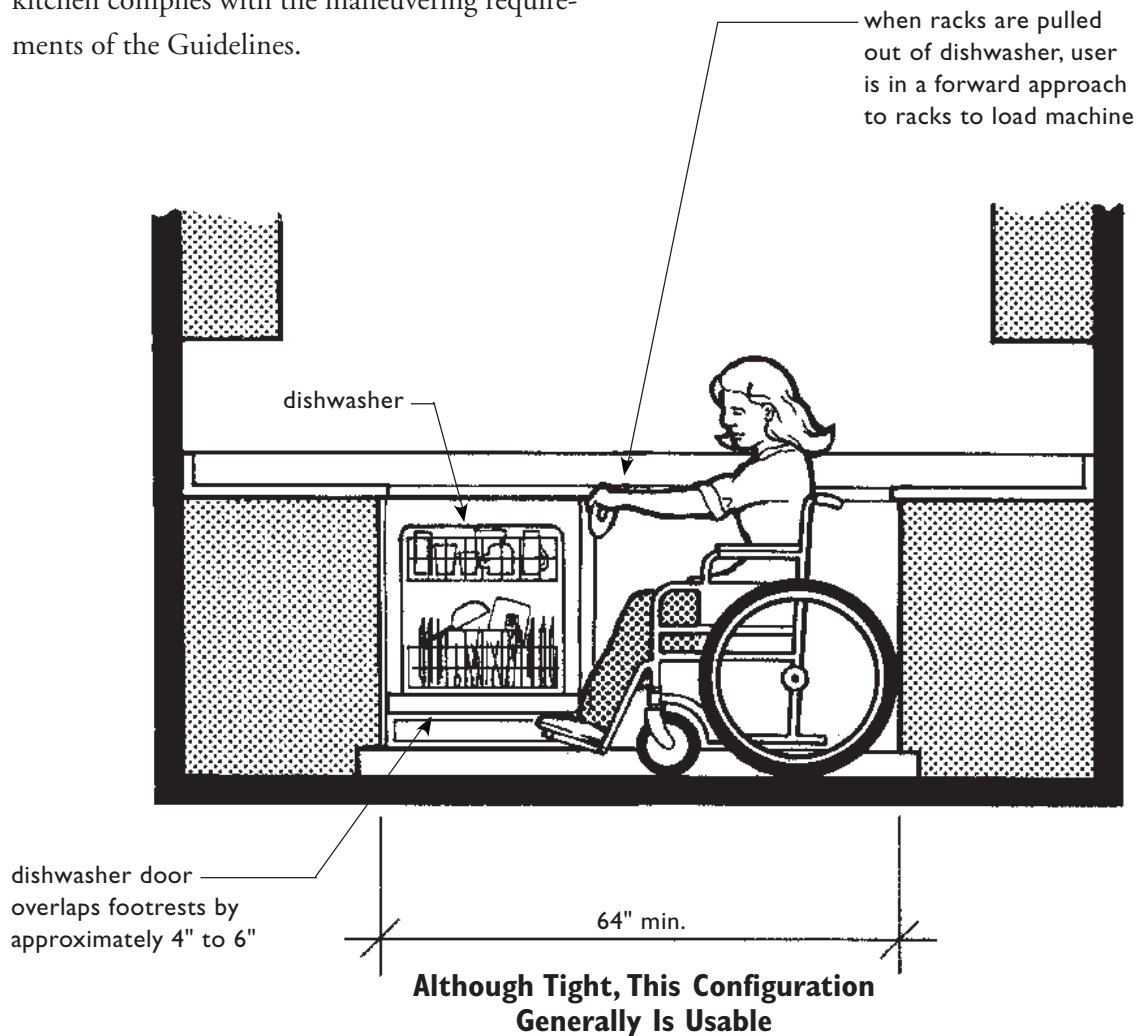
this dimension may need to be increased slightly for a double basin sink if wider than 30"



**Sink and Dishwasher at Bottom of U-Shaped Kitchen Increases Room Width**

In the lower plan on page 7.9, the refrigerator is pulled away from the sink and beyond the turning circle. Since a refrigerator may not overlap the five-foot turning space, if the refrigerator must be located closer to the sink, the distance between the legs of the U must be increased.

To reduce the need for additional floor space, and because clear floor space at appliances and fixtures may overlap, the clear floor space at the sink can serve as the clear floor space for a forward approach to dishwasher racks when they are pulled out of the dishwasher. Even though the dishwasher door would rest on the feet of the user, the required clear floor spaces are provided and the kitchen complies with the maneuvering requirements of the Guidelines.

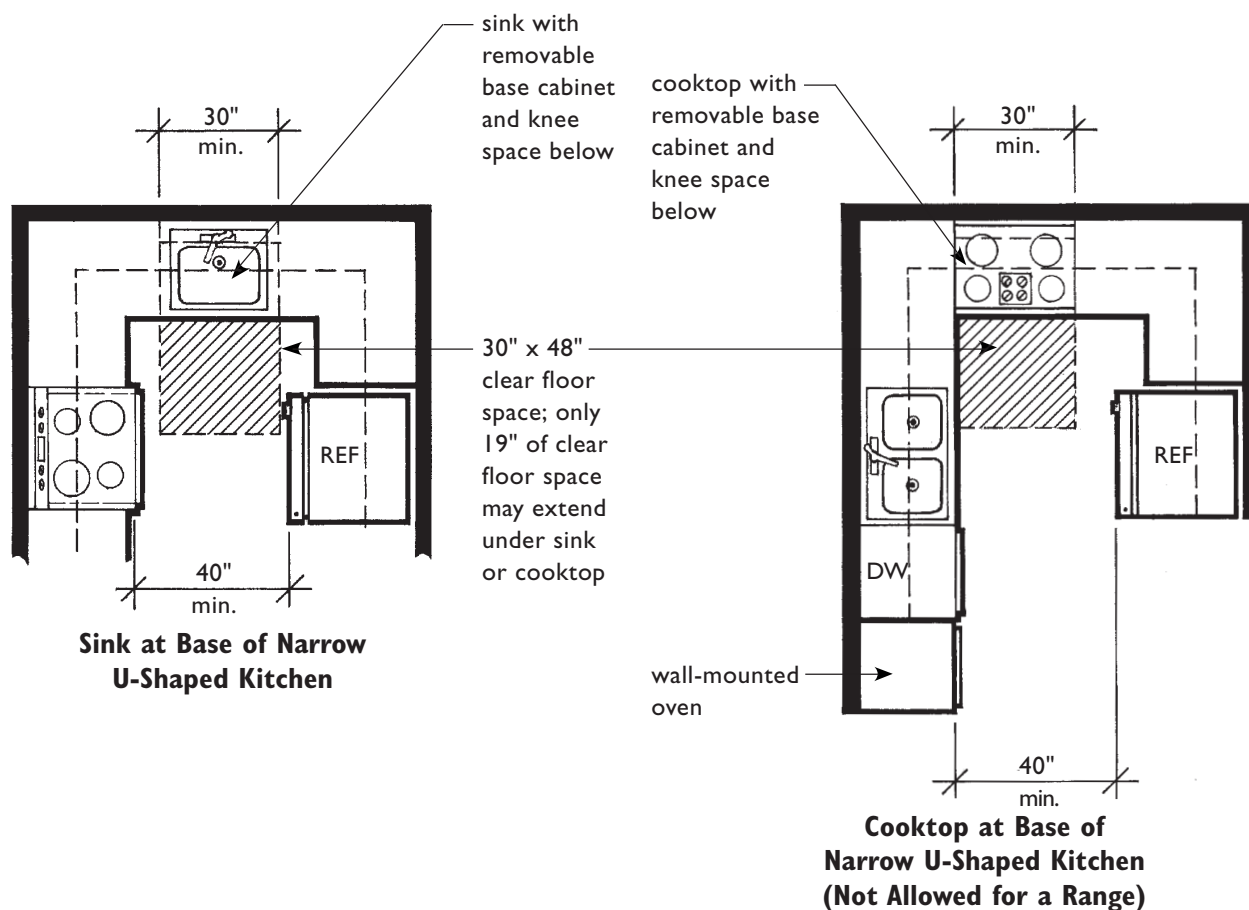


## AN EXCEPTION

The Guidelines permit U-shaped kitchens with a sink or cooktop at the base of the U to have less than 60 inches between the legs of the U only when removable base cabinets are provided under the cooktop or sink. A clearance of at least 40 inches is required. Since knee space cannot be provided below a range, kitchens with a range at the base of the U must have the 60-inch minimum turning diameter.

Once the base cabinet is removed, the resulting knee space allows a person using a wheel-

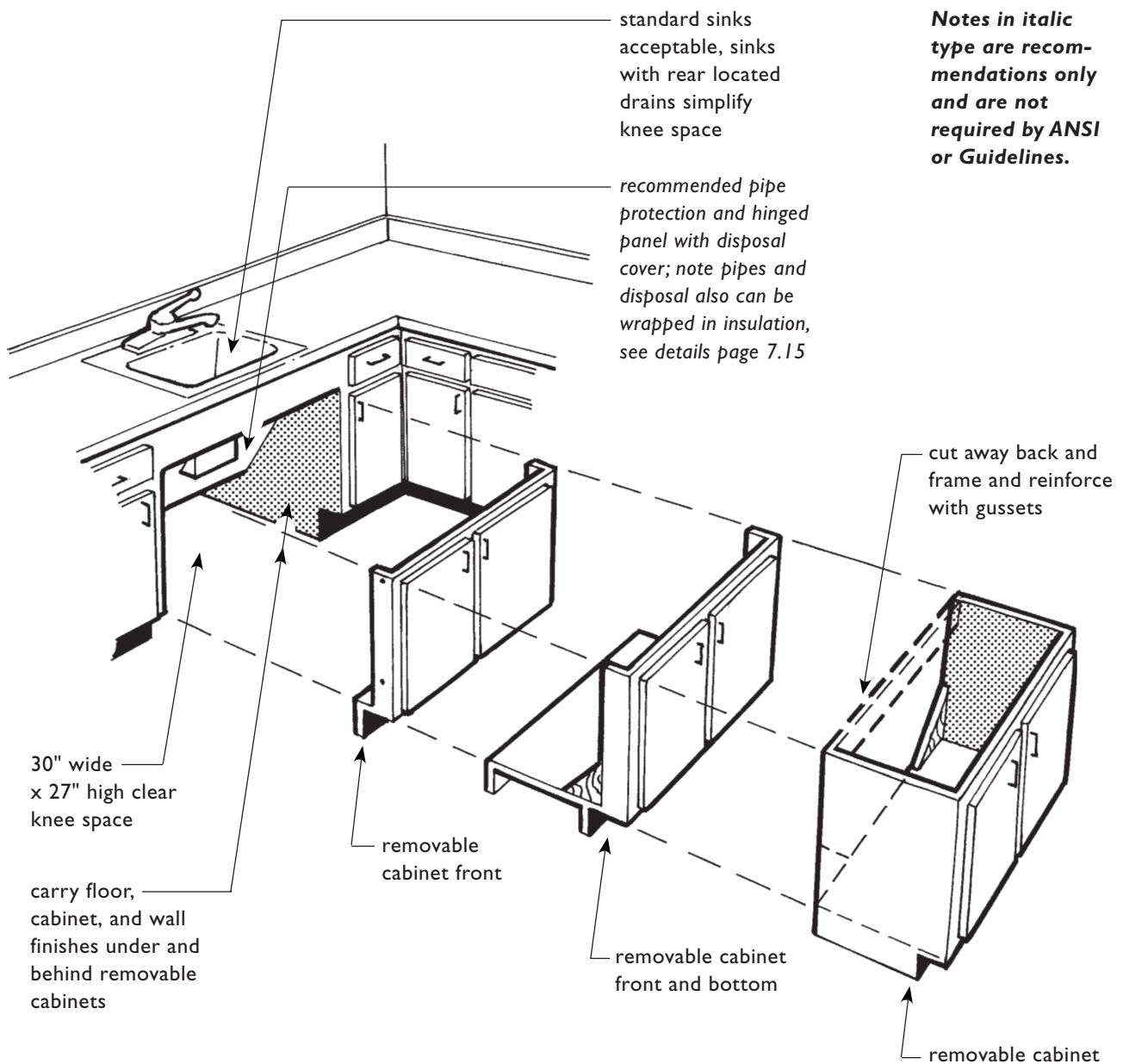
chair to pull up under the feature to reach controls and perform cooking/cleaning functions. A note of caution: knee space beneath cooktops provides essential maneuvering space for seated people, but it also creates a greater risk from hot food spilled in the lap. If cooktops are to be provided with knee space below, although not required, it is suggested that they be placed in lowered or adjustable height counter segments so they can be used more easily and safely by people using wheelchairs. Knee space configurations are shown on pages 7.14 and 7.15.



## REMOVABLE BASE CABINETS

Narrow U-shaped kitchens, where knee space must be provided below sinks or cooktops, can appear identical to those kitchens which lack this additional feature since knee space can be concealed by a removable base cabinet. When a potential resi-

dent or owner needs the knee space it can be provided quickly and easily. Specifications for knee space are based on the Guidelines' requirements for bathrooms and ANSI 4.19 and 4.32. See also pages 7.14 - 7.15 and 7.52.



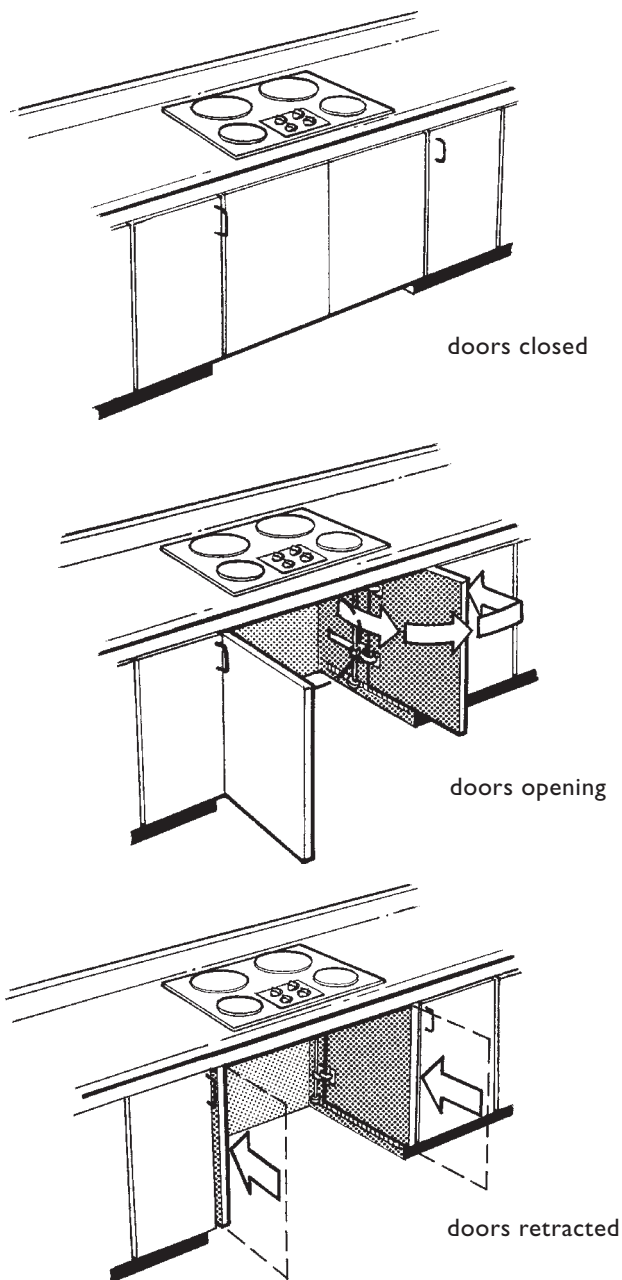
**Notes in italic type are recommendations only and are not required by ANSI or Guidelines.**

**Possible Removable Cabinet Options for Required Knee Spaces at Sinks or Cooktops in Narrow (Less Than 60" Wide) U-Shaped Kitchens**

The Guidelines require that the floor, walls, and cabinet faces of knee space be finished during initial construction so no other work is necessary when the base cabinet is removed. When sinks or cooktops are installed at the bottom of a narrow U-shaped kitchen, regardless of whether the knee space is exposed or concealed by a removable cabinet, hot pipes or exposed sharp edges should be insulated or enclosed at the time of initial construction. Protection methods are addressed on page 7.14 “Knee Space and Pipe Protection.”

There are no kitchen cabinet manufacturers that currently offer “removable base cabinets” in their standard lines. The methods for providing removable cabinets presented here are some of the possible solutions. Of those shown, the removable cabinet front is likely to be the easiest to accomplish based upon current manufacturing processes. However, the resident may need to reinstall the cabinet at a later date, therefore, storage needs to be considered. It is recommended that instructions regarding proper storage be taped to the inside of the cabinet, as well as reinstallation instructions, if applicable. Other similar design options include removable cabinet floor and bottom, or, with some modification of rear supports, removal of the entire cabinet. This last option requires the counter to be installed independent of the base cabinet, with storage of the removable portion of the cabinet again a consideration.

Use of swinging retractable cabinet door hardware provides another excellent method to conceal knee space because the doors are self-storing and no part of the cabinet has to be removed or stored at another location. A special combination hinge allows the doors to swing open in a traditional manner and, when desired, allows the doors to be pushed back into the cabinet.



**Use of Self-Storing Door Hardware to Expose Knee Space**

## KNEE SPACE AND PIPE PROTECTION

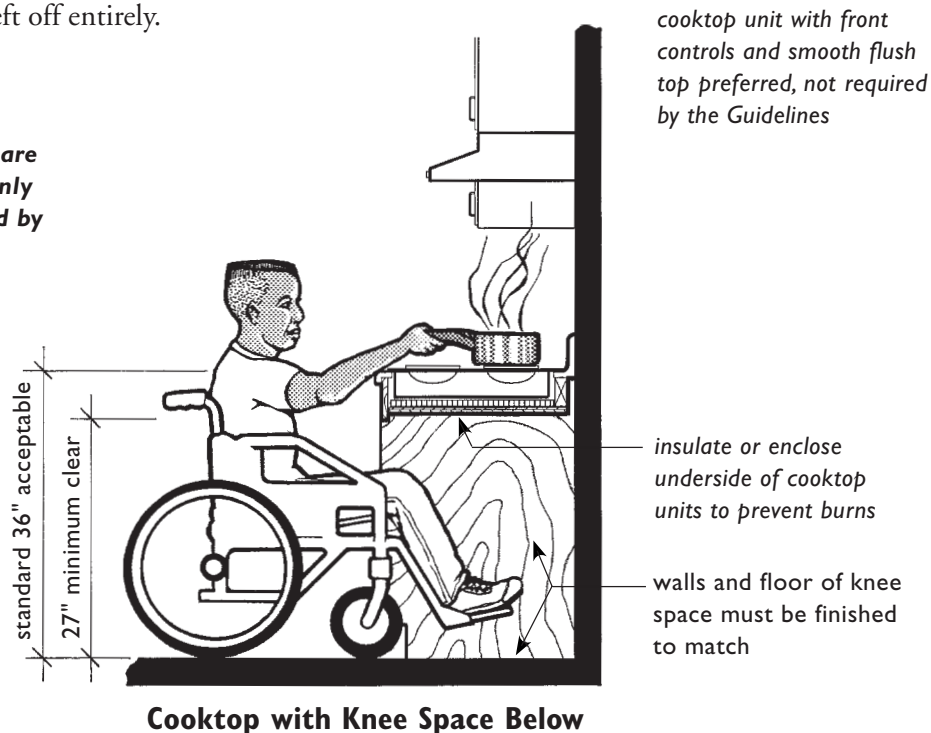
Where knee spaces are provided below sinks and cooktops, protecting seated users from burns and abrasions is strongly recommended. While the Guidelines do not specify such protection, the two most common design standards on accessibility (ANSI A117.1, 1986 and UFAS) require that the bottom of cooktops and sink supply lines and drain pipes be insulated or enclosed. Many people who use wheelchairs or scooters have limited sensation in their legs and cannot feel that they are touching a hot pipe or sharp edge and may be unaware that a serious injury has occurred. In addition, the need for protection from burns is an important safety consideration for all persons.

Pipes at sinks may be wrapped with insulation, but each time the plumbing is serviced the insulation must be removed and reinstalled. If the pipes are rewrapped using the original insulation (which may have lost much of its adhesion) the resulting application often is ineffective or the insulation may be left off entirely.

A more aesthetic and practical method for pipe protection is the installation of a removable panel over the plumbing. This panel shields the seated user and hides the plumbing from view. If such a panel is installed it should not inhibit access by encroaching upon the knee space. The panel should be hinged or otherwise removable so the pipes can be serviced easily.

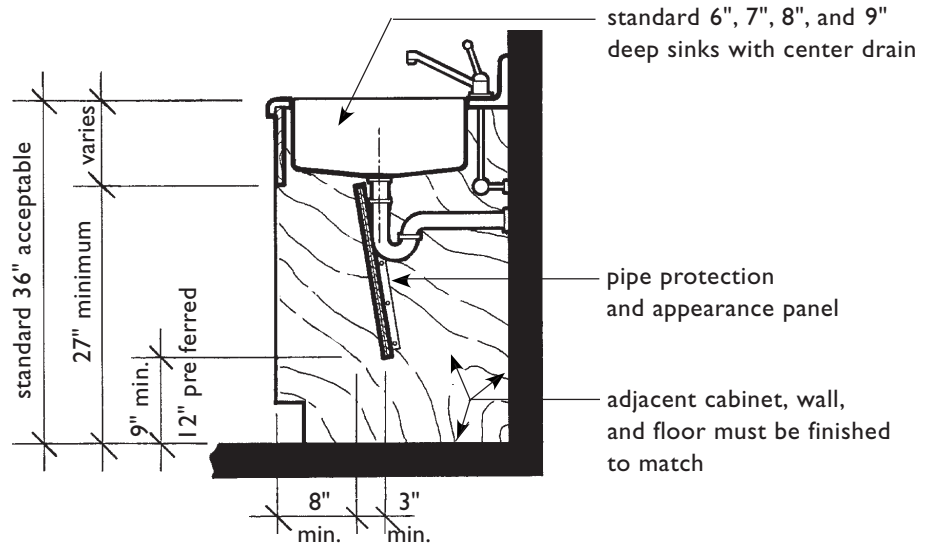
The dimensions for the knee space itself must be 30 inches wide (minimum) and should be 27 inches high (minimum). Since there is no specific ANSI figure delineating the requirements for knee space clearance beneath sinks or cooktops in dwelling units, the accompanying illustrations may be used as guidance when providing knee space beneath removable base cabinets. The pipe protection panel is patterned after the ANSI Figure 31 for Lavatory Clearances. See also ANSI 4.32.5.5 Sinks and 4.32.5.6 Ranges and Cooktops.

*Notes in italic type are recommendations only and are not required by ANSI or Guidelines.*

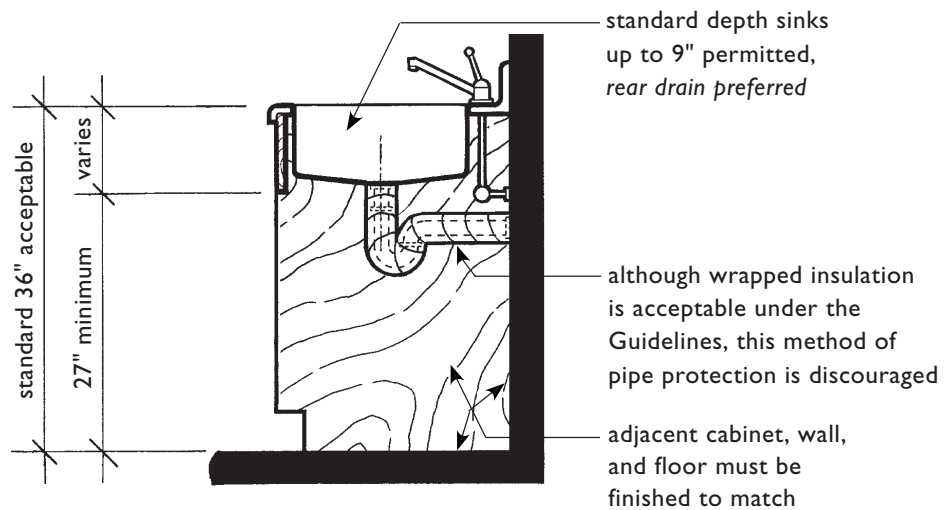


### Knee Space at Sink with Pipe Protection Panel

*sinks with rear located drain are not required but are a significant advantage when creating usable knee space*



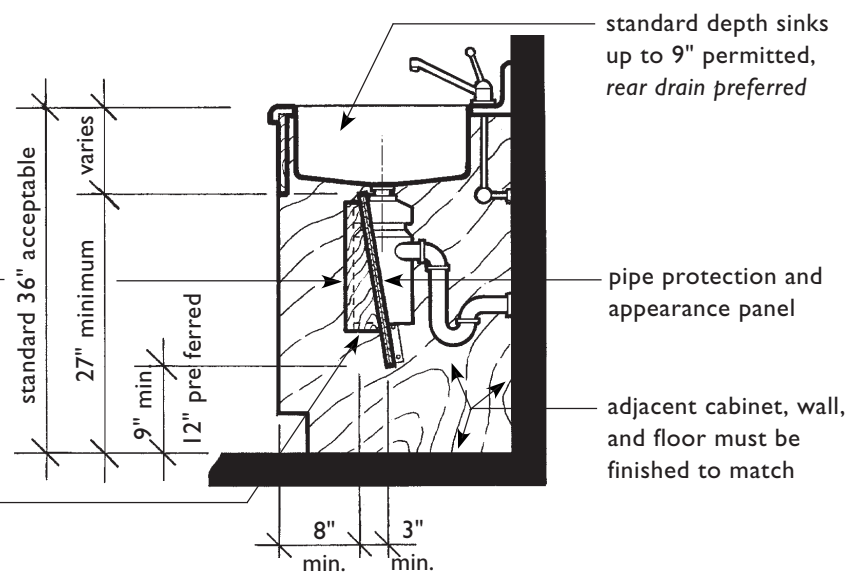
### Knee Space at Sink with Wrapped Pipes



### Knee Space at Sink with Garbage Disposal and Pipe Protection Panel

disposal cover  
12" wide ±

open bottom for  
ventilation and access  
to reset buttons



*shallow basin sink and rear drain, although not required by the Guidelines, greatly improve access by wheelchair user*

*lever hardware, although preferred, is not required*

knee spaces must have walls and floor surfaces finished

*plumbing and other elements should be covered by a removable pipe protection and appearance panel, or be wrapped with padded insulating material, see details page 7.15*

knee space 30" wide is required and 27" high is recommended under sinks or cooktops located at bottom of U-shaped kitchens when the U is less than 60" wide

30" X 48" min. clear floor space; must not extend more than 19" into knee space

30" min.

40" min.  
face to face  
of appliances  
and cabinets

***Notes in italic type are recommendations only and are not required by ANSI or Guidelines.***

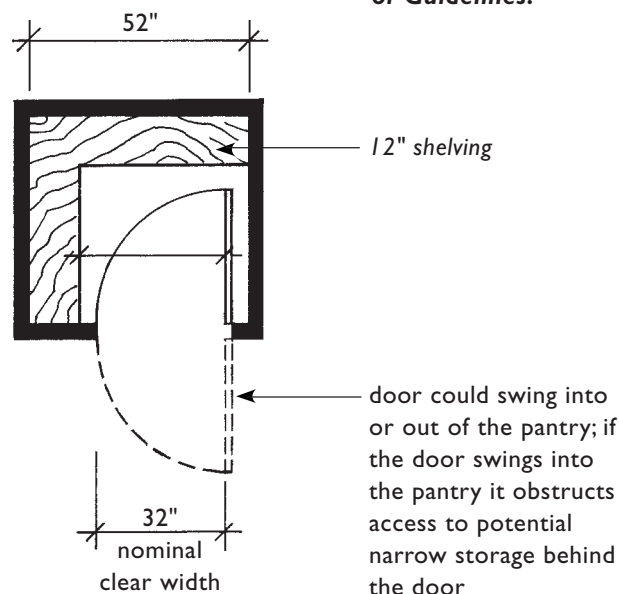
### Knee Space at Narrow U-Shaped Kitchens

## PANTRIES

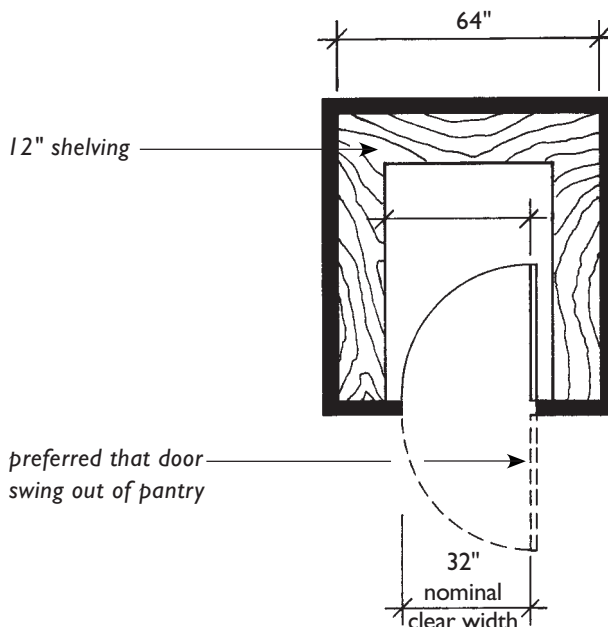
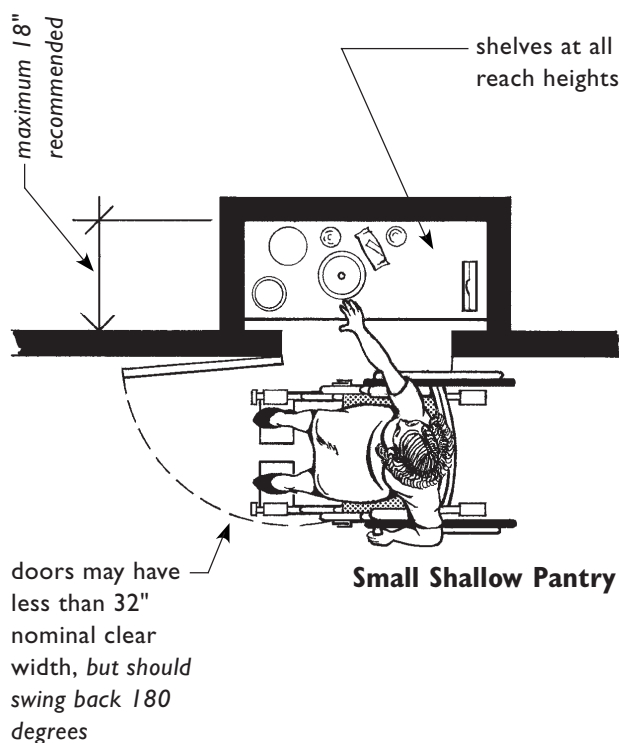
Shallow storage closets, such as pantries, may have doors that do not provide a 32-inch clear width since they do not require the user to pass through the door to reach the contents. However, at walk-in pantries that must be entered to reach the stored items, the doorway must provide a 32-inch nominal clear opening. Shelving is not addressed by the Guidelines; however, it is recommended that it be provided at a variety of levels.

In the small walk-in pantry (below left), if wheelchair users enter the pantry facing the contents, they must back out of the space. In the larger walk-in pantry (below right), if the first shelf is placed at two feet above the floor, a wheelchair user could turn around in the pantry and exit facing out.

*Notes in italic type are recommendations only and are not required by ANSI or Guidelines.*



**Small Walk-In Pantry**



**Larger Walk-In Pantry**

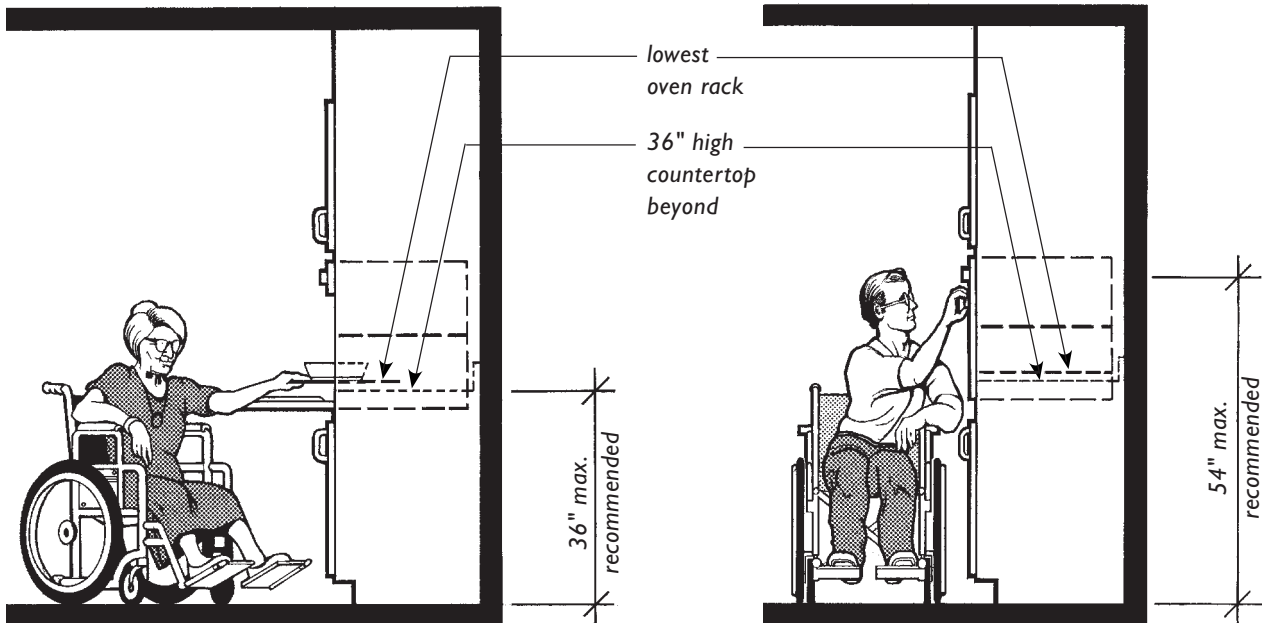
## RECOMMENDATIONS FOR INCREASED ACCESSIBILITY

### AT WALL OVENS

Wall-mounted ovens, like ovens in ranges, must have either a parallel or forward clear floor space adjacent to the appliance. When a single wall-mounted oven is installed, it is recommended that the bottom of the oven be mounted at or near counter height so a seated user could reach over a potentially hot door and, at a minimum, pull out the bottom oven rack. Controls also should be within the reach of a seated user.

If double ovens are installed, a wheelchair user must be able to execute a parallel or a forward approach at the appliance. At least one oven interior and its controls, even though appliance controls are not covered by the Guidelines, should be within the reach range of a seated person. See page 5.5 for reach ranges.

bottom of oven should  
be positioned so lowest  
oven rack is at or near  
countertop height



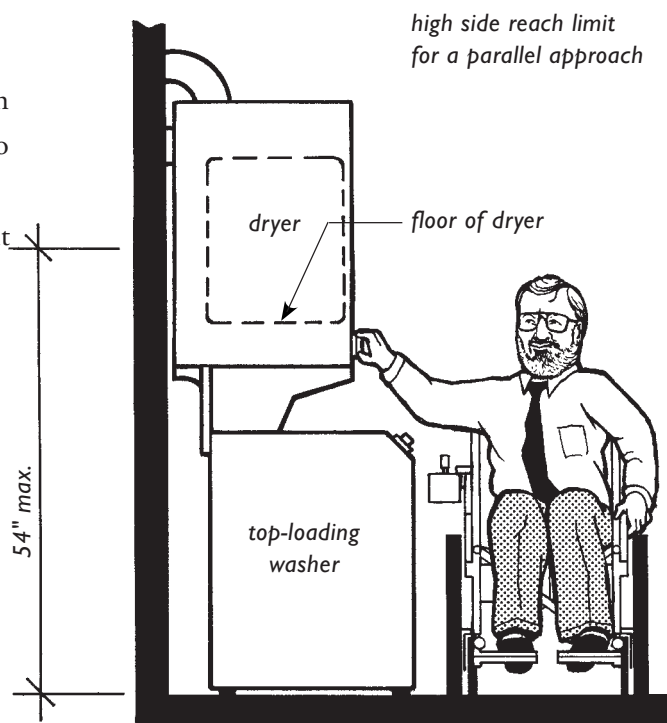
**36 Inches to Bottom  
of Single Wall-Mounted Oven**

**54 Inches Recommended Reach to  
Controls at Single Wall-Mounted Oven**

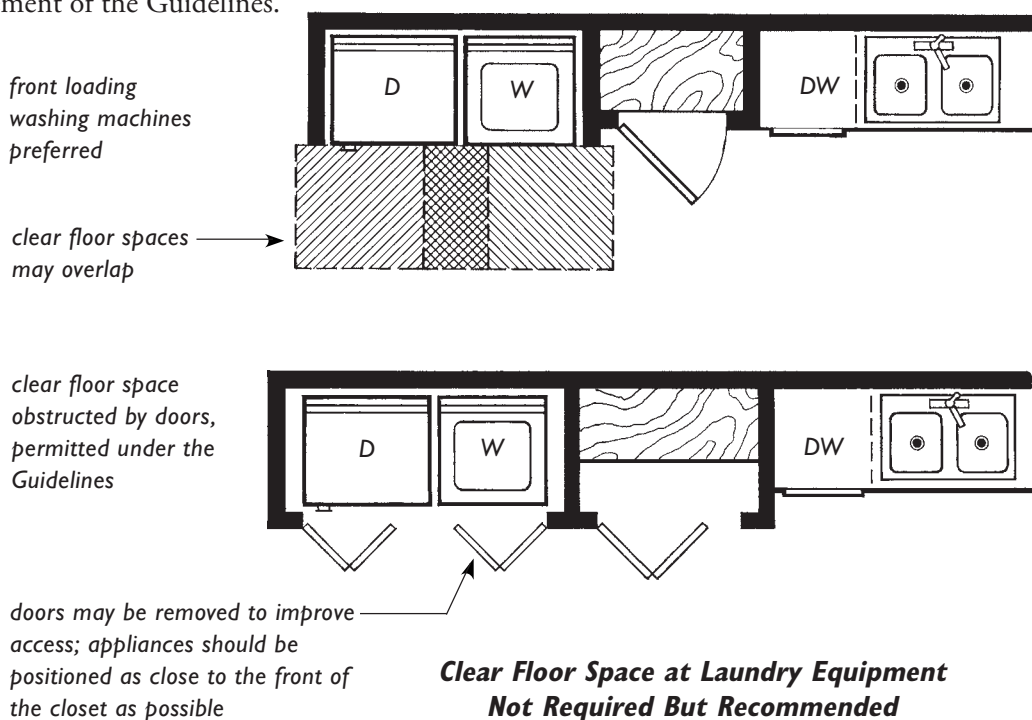
### At Laundry Equipment

The Guidelines do not require washers and dryers in individual dwelling units to be accessible, which also means that they are not required to have 30-inch x 48-inch parallel clear floor spaces positioned in front of them. *However, when located in the kitchen along a row containing other appliances, it is recommended that space be provided for a parallel approach to each machine. The Guidelines permit the installation of stacked washers and dryers. It is recommended that the controls be within the reach of seated users; see the illustration in the upper right column.*

*If the washer and dryer are located behind doors or are in a separate utility room, clear floor spaces in front of the machines are not required.* However, if the door to the utility room is intended for user passage, the door must provide a 32-inch nominal clear opening. When laundry equipment is located in a common use area, it must conform to the requirements for accessible public and common use facilities, see page 2.26. Note: Non-italic type indicates a requirement of the Guidelines.



**Stacked Washer/Dryer Unit with Dryer and All Controls Within Reach Range of Seated User**

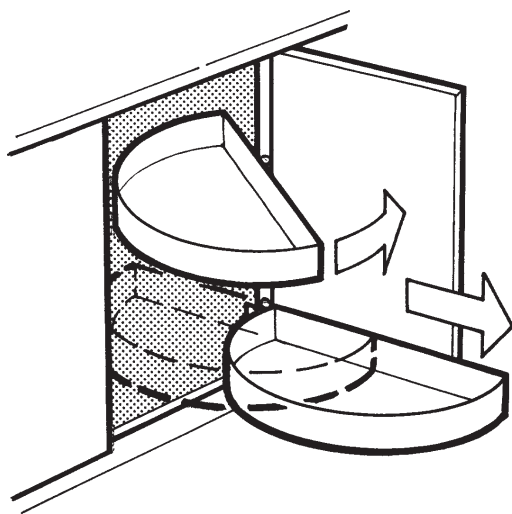


## AT OTHER APPLIANCES AND FIXTURES

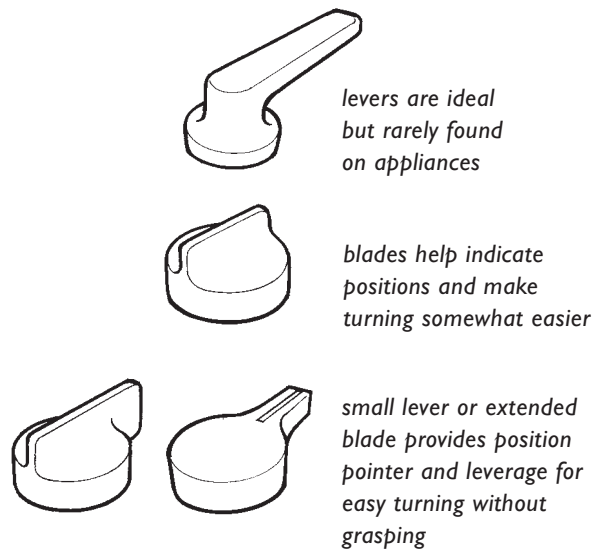
*While not required by the Guidelines, careful consideration should be given to the selection of other appliances and fixtures installed in kitchens so potential residents who may currently, or in the future, have a physical limitation may more completely use and enjoy their dwelling.*

*A partial list of additional considerations for kitchens:*

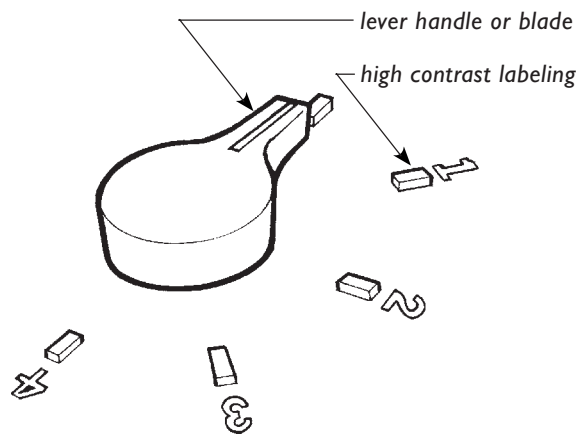
- ranges and cooktops with controls that are front- or side-mounted and have click stops to indicate heat settings,
- vent hoods with controls mounted at or near countertop level,
- shallow sink basins with rear-mounted drains when removable base cabinets are provided,
- lever or blade type handle faucets and controls,
- revolving/extending semicircular shelves for corner base cabinet storage.



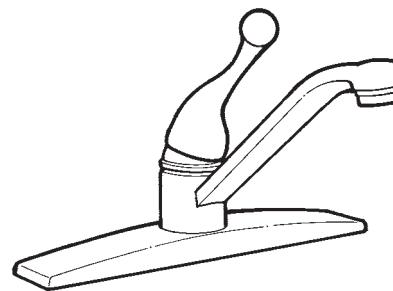
**Revolving/Extending Shelves  
at Corner Base Cabinets Are an Advantage  
for All Users**



**Preferred Control Choices**



**Ideal Control Knob**



**Lever Handles on Faucets Are Easy  
for Most People to Operate**

**EXAMPLES OF KITCHEN  
FLOOR PLANS THAT COMPLY  
WITH THE GUIDELINES**

The plans presented on the following pages are examples of “usable” kitchens that comply with the Fair Housing Accessibility Guidelines (the Guidelines). They range from very small to larger, more elaborate kitchens but are only a small sampling of the layouts possible. The plans are neither required nor even suggested as ideal examples. They are included to illustrate typical applications or interpretations of specific requirements of the Guidelines under various circumstances.

The plans may be used as resource material and planning guides when developing new multi-family housing designs. Conventional industry standard fixture and appliance sizes have been used consistently when developing these plans. It is important to allow sufficient space for any fixtures that may be larger than those shown here. Although

designers should rely upon the dimensions indicated and not scale off the drawings, all plans in this section are reproduced at 1/4 inch scale.

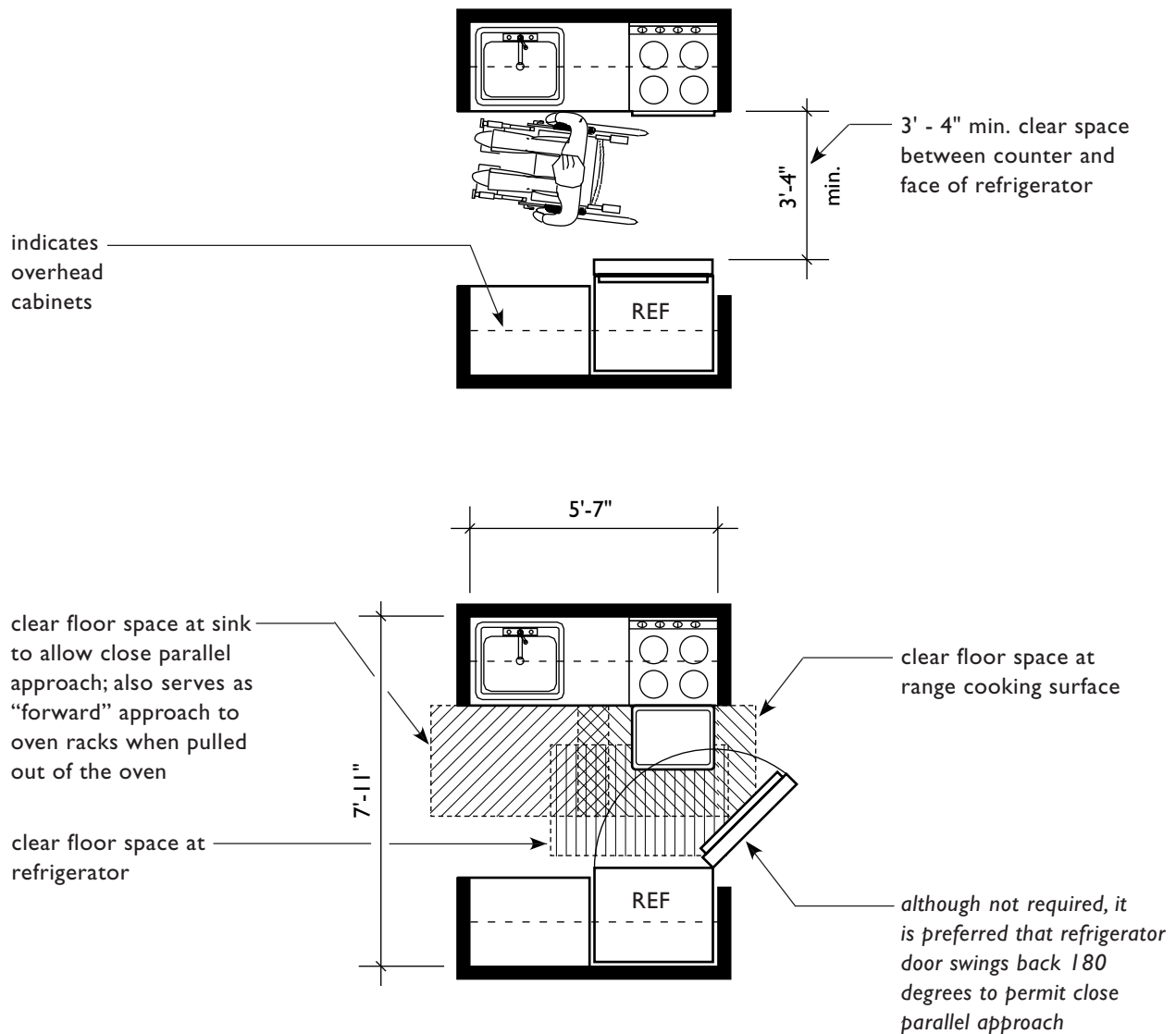
The plans are presented in pairs, with the first plan showing fixture and appliance placement and key dimensions, such as aisle widths, that are required by the Guidelines. The second plan gives the overall room dimensions which are offered for comparison purposes only and are not required by the Guidelines. The second plan also shows clear floor spaces adjoining individual appliances and fixtures and describes their use, and, to give the reader the “real” space that appliances occupy, appliance doors are shown in their open position.

Text and notes presented in *italic* type are comments or recommendations and are not required by the Guidelines.

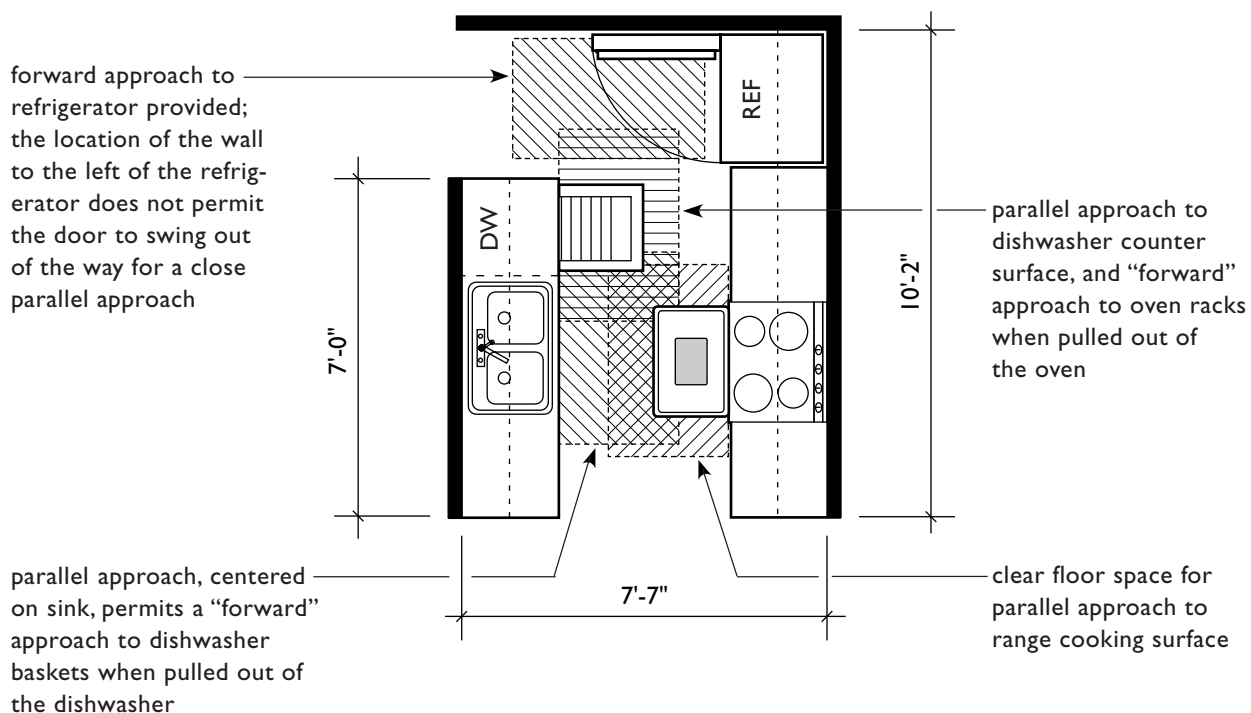
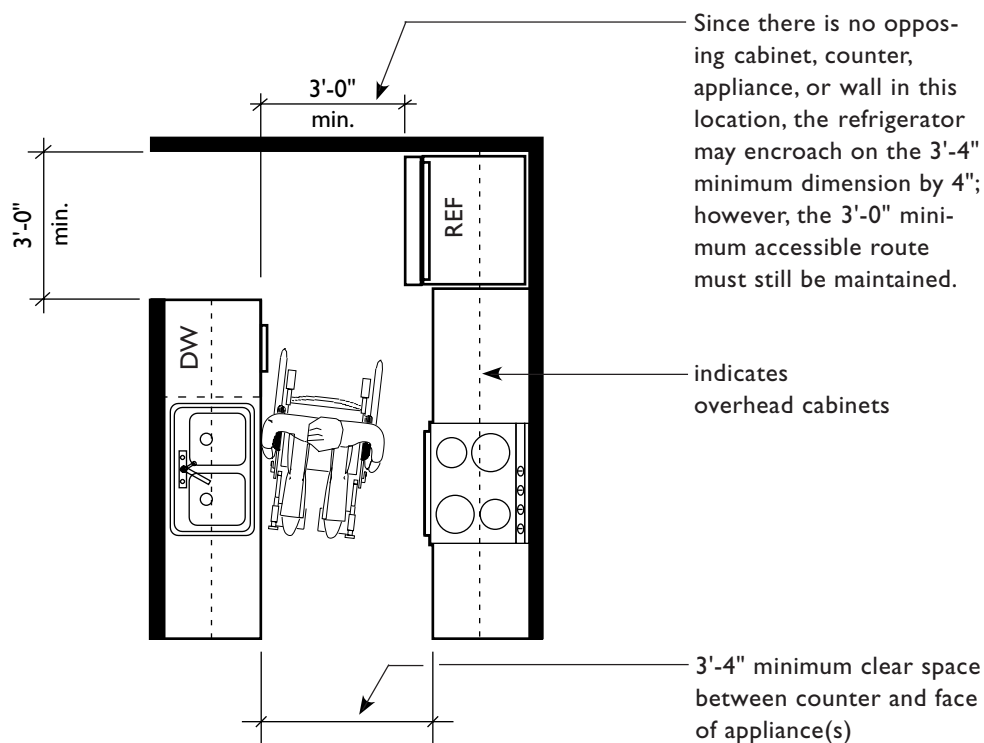
### Very Small Parallel Wall Kitchen (Without Dishwasher)

In this kitchen design, walls may not continue across either open end because they would obstruct clear floor spaces required at each appliance.

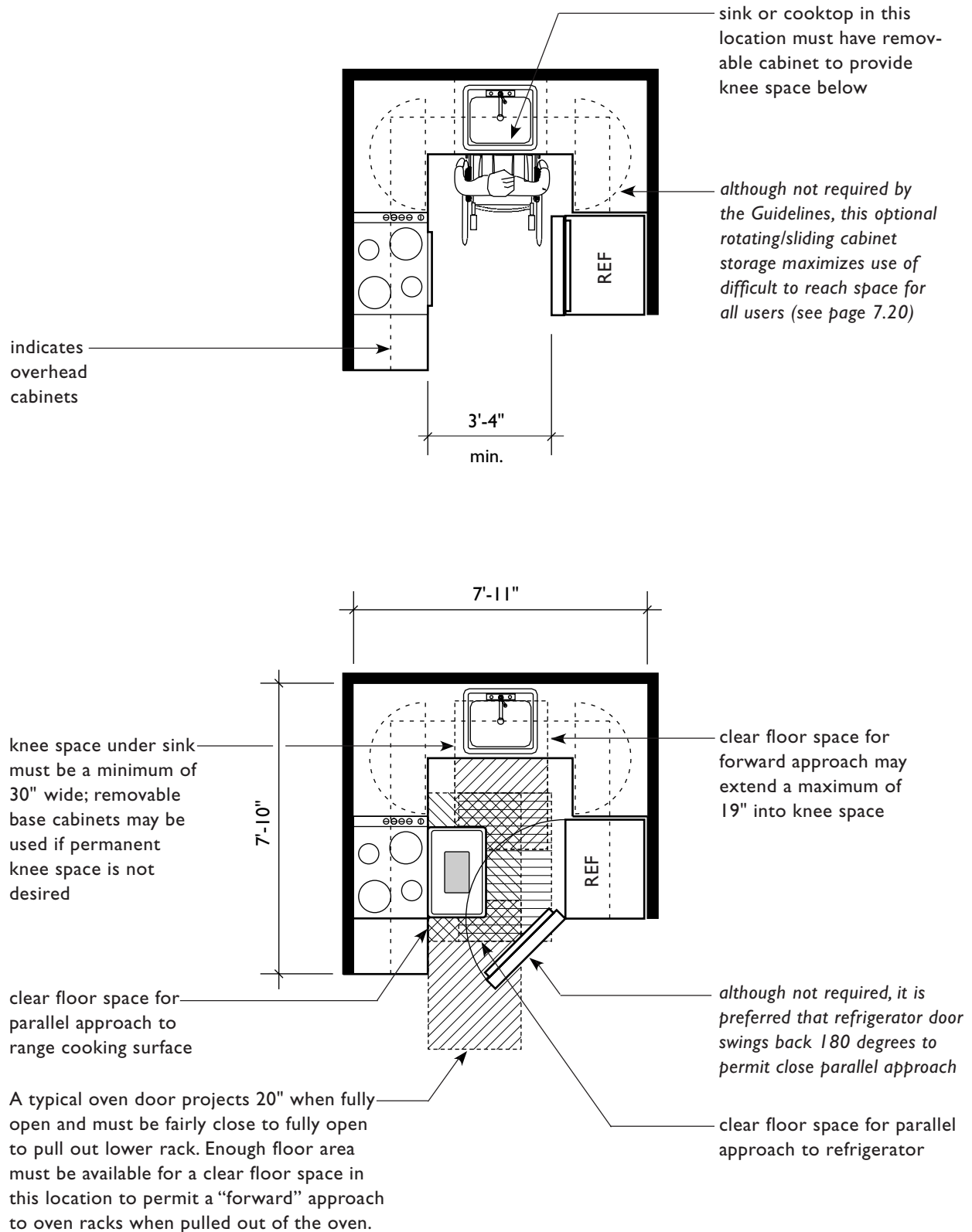
Although discouraged because maneuvering space would be severely restricted, the sink end could be closed if a removable cabinet that conceals a minimum 30-inch wide knee space is provided under the sink; 36-inch wide knee space is preferred.



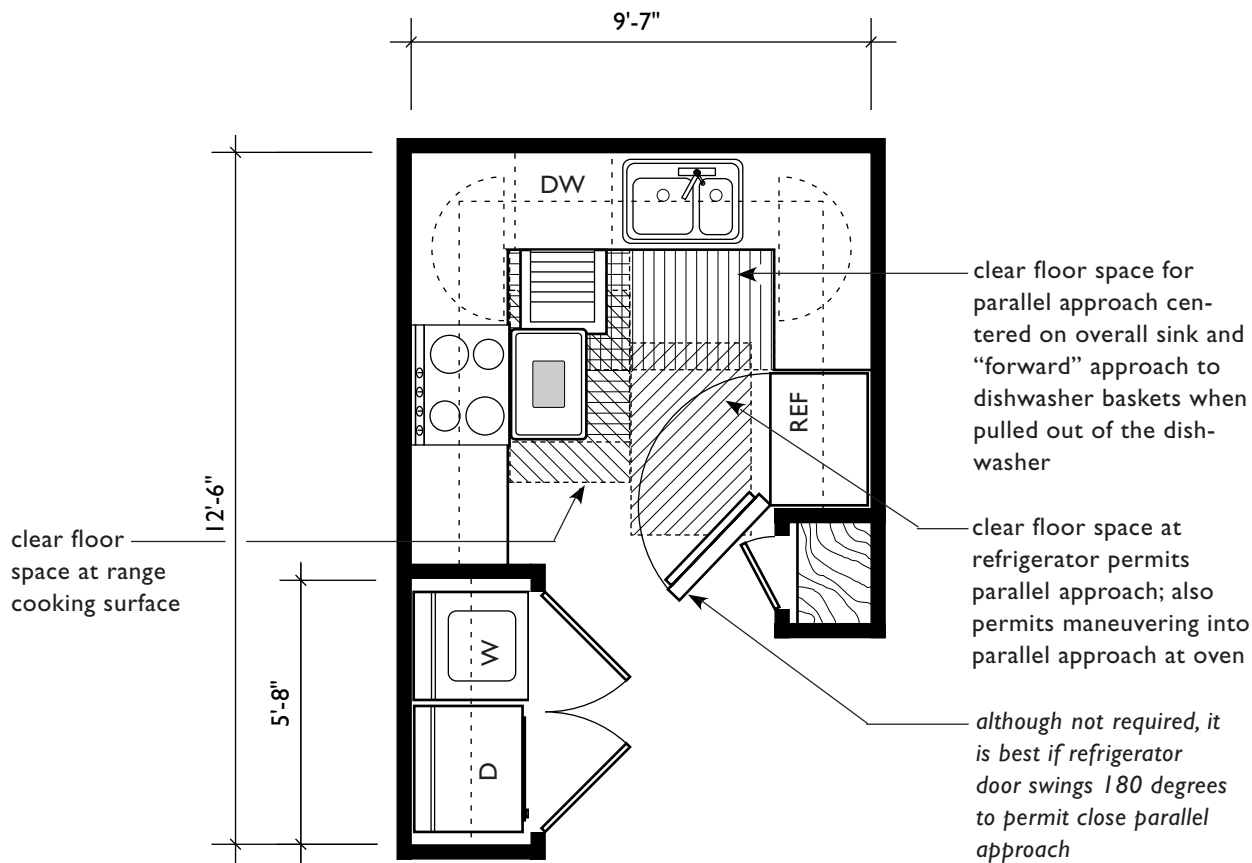
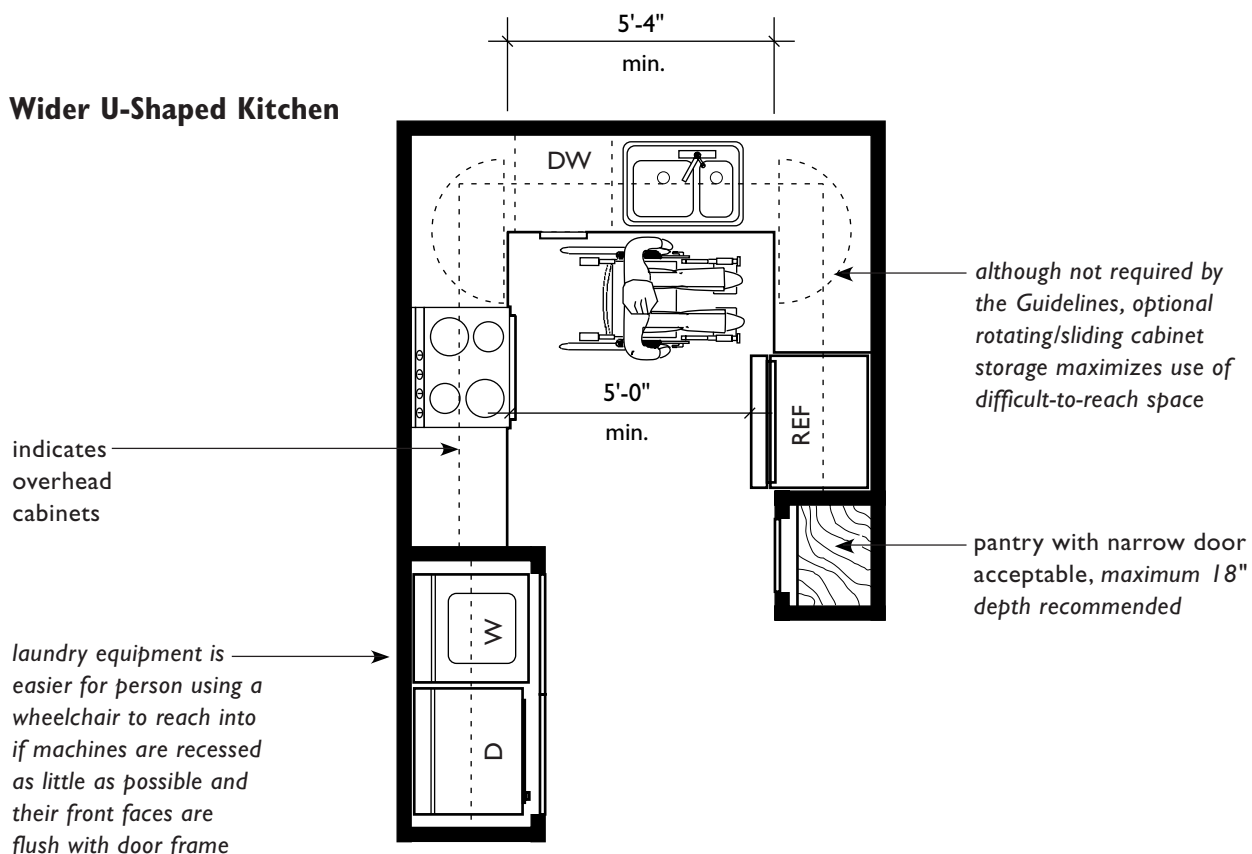
## Parallel Wall Kitchen



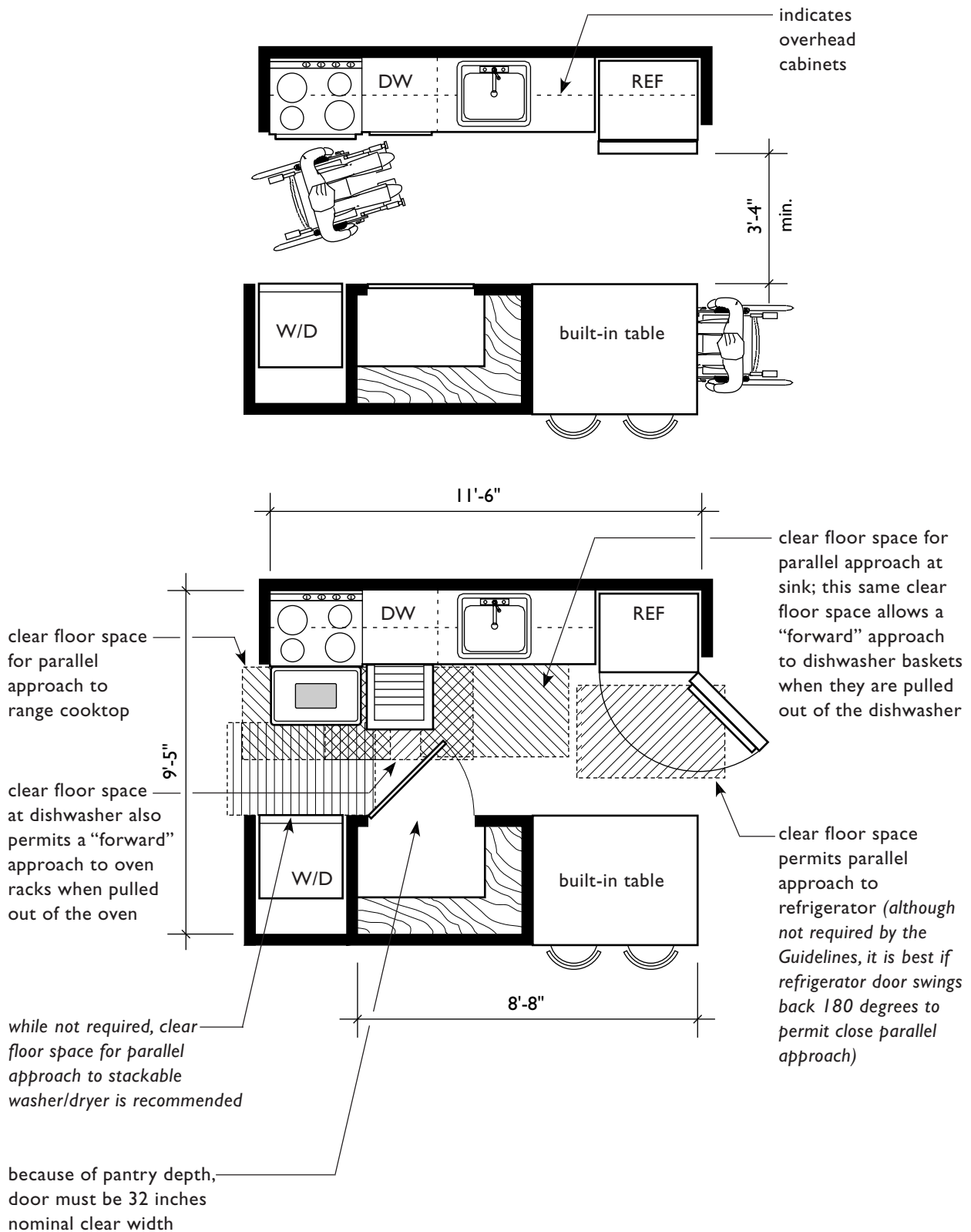
## Narrow U-Shaped Kitchen (Without Dishwasher)



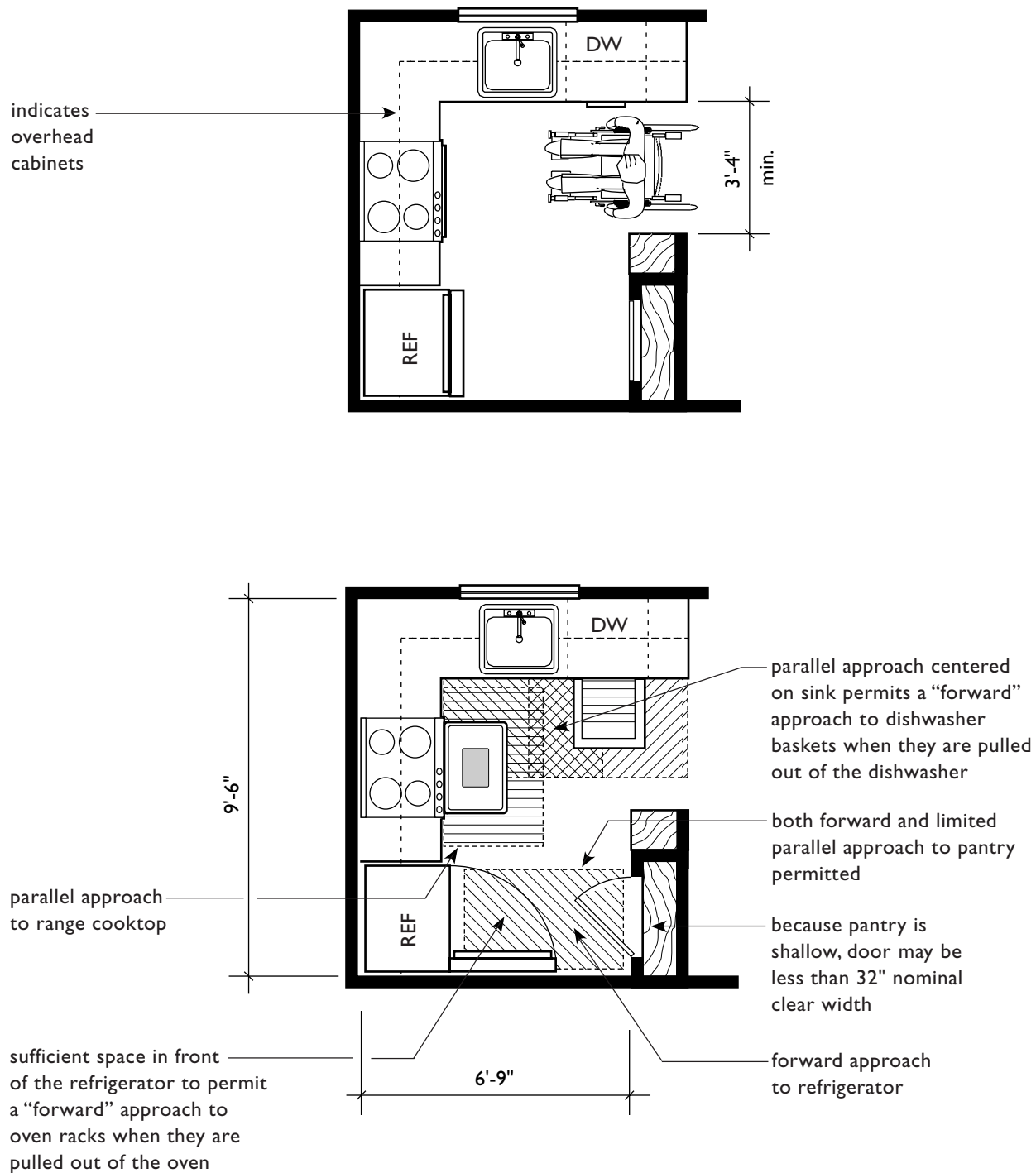
## Wider U-Shaped Kitchen



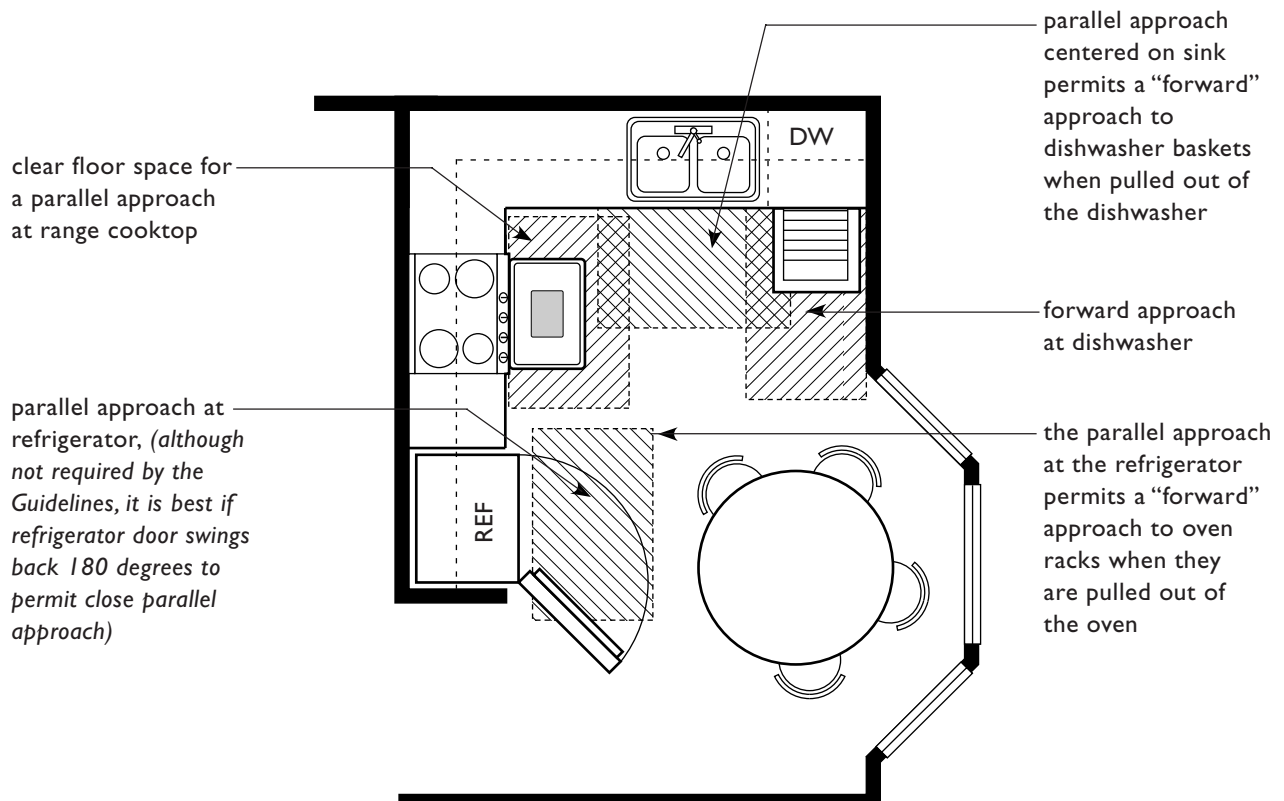
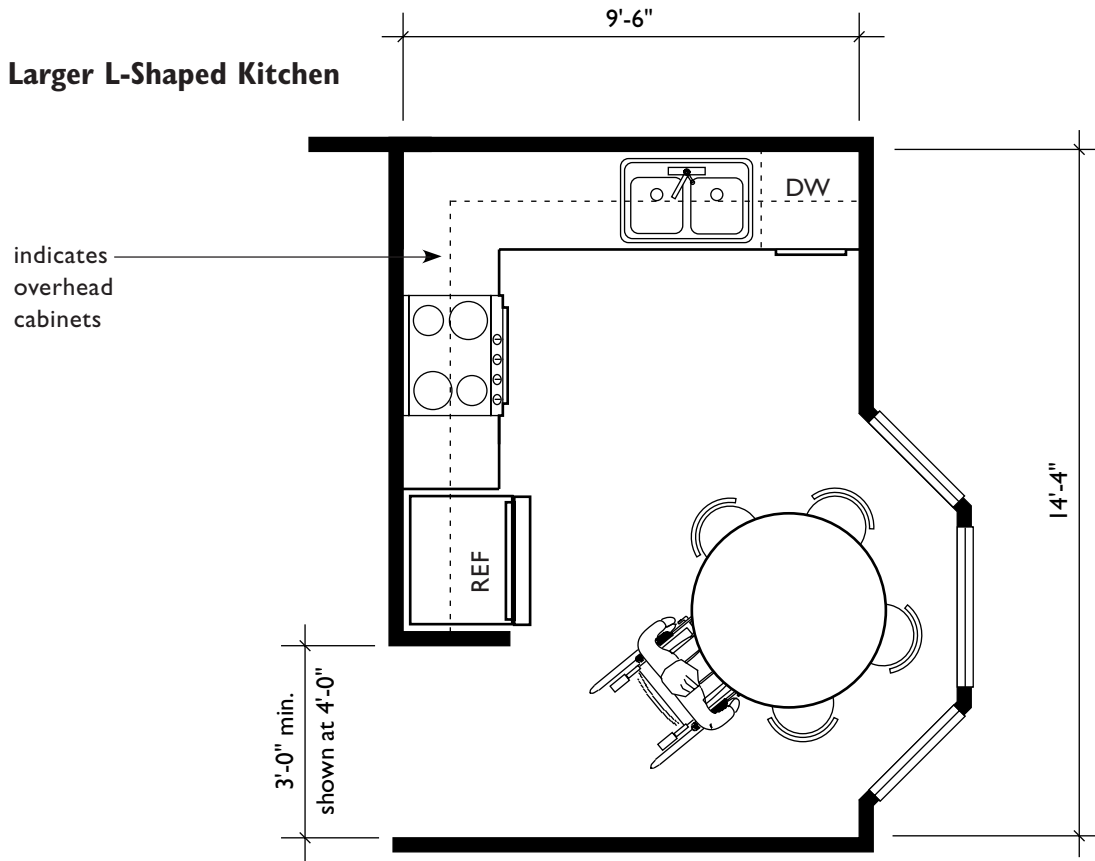
## Parallel Wall Kitchen



## Small L-Shaped Kitchen



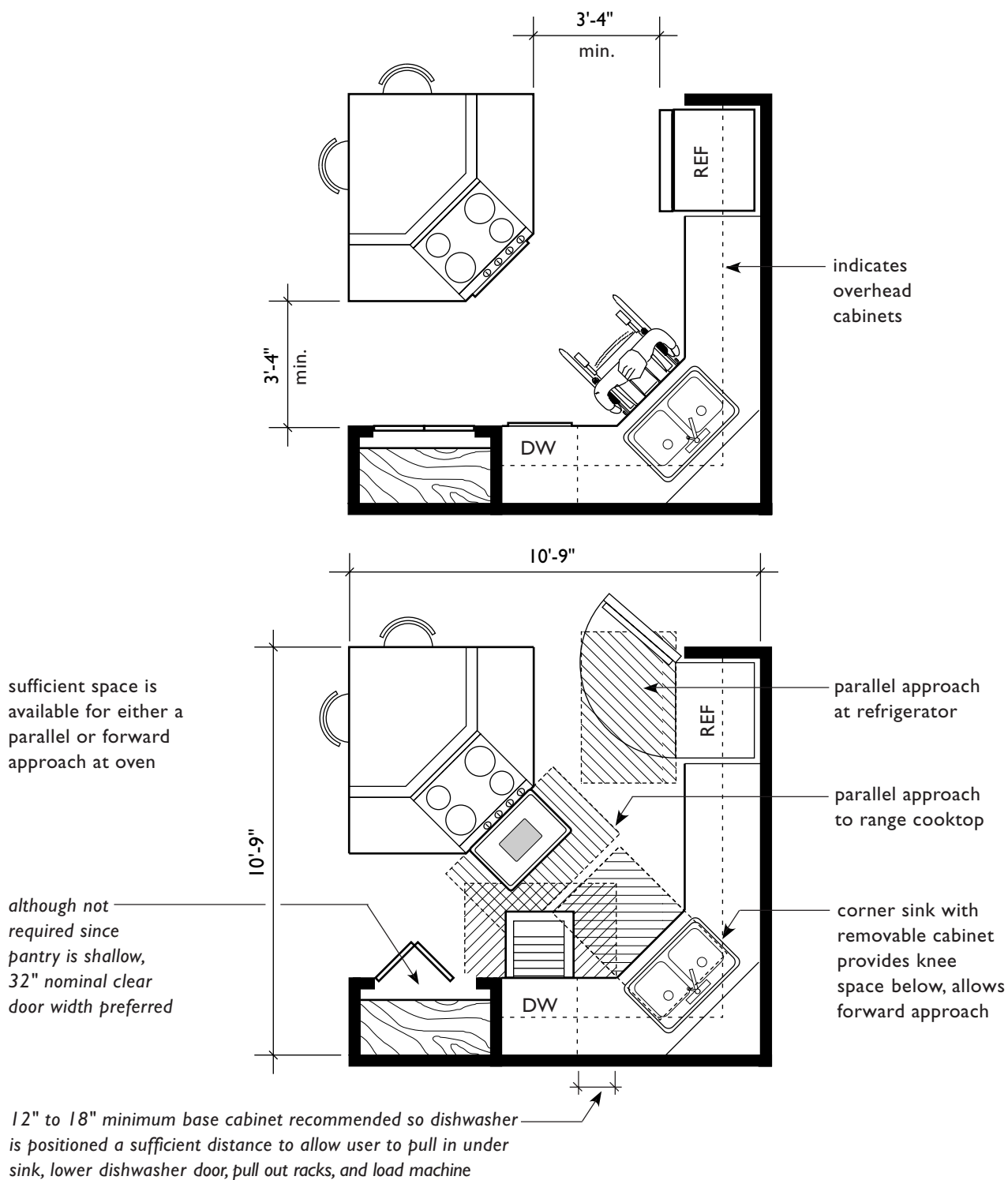
## Larger L-Shaped Kitchen



### Broken U-Shaped Kitchen

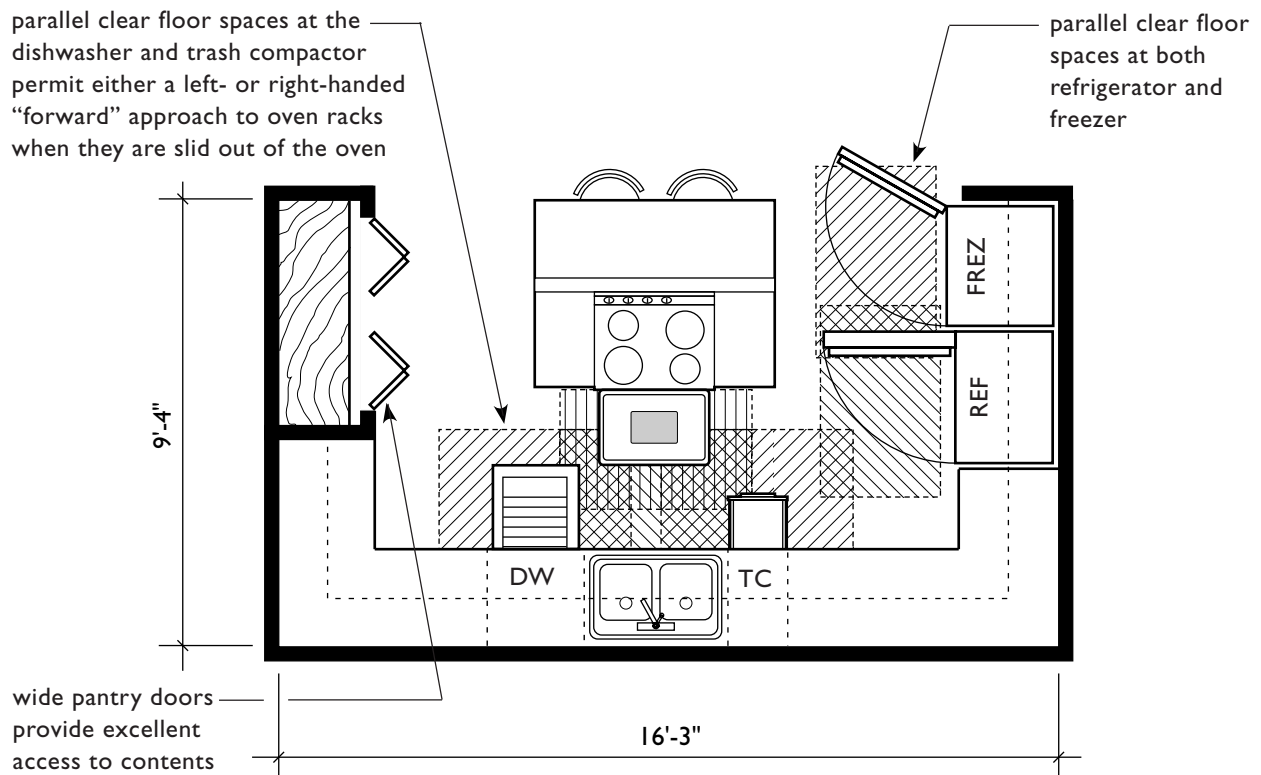
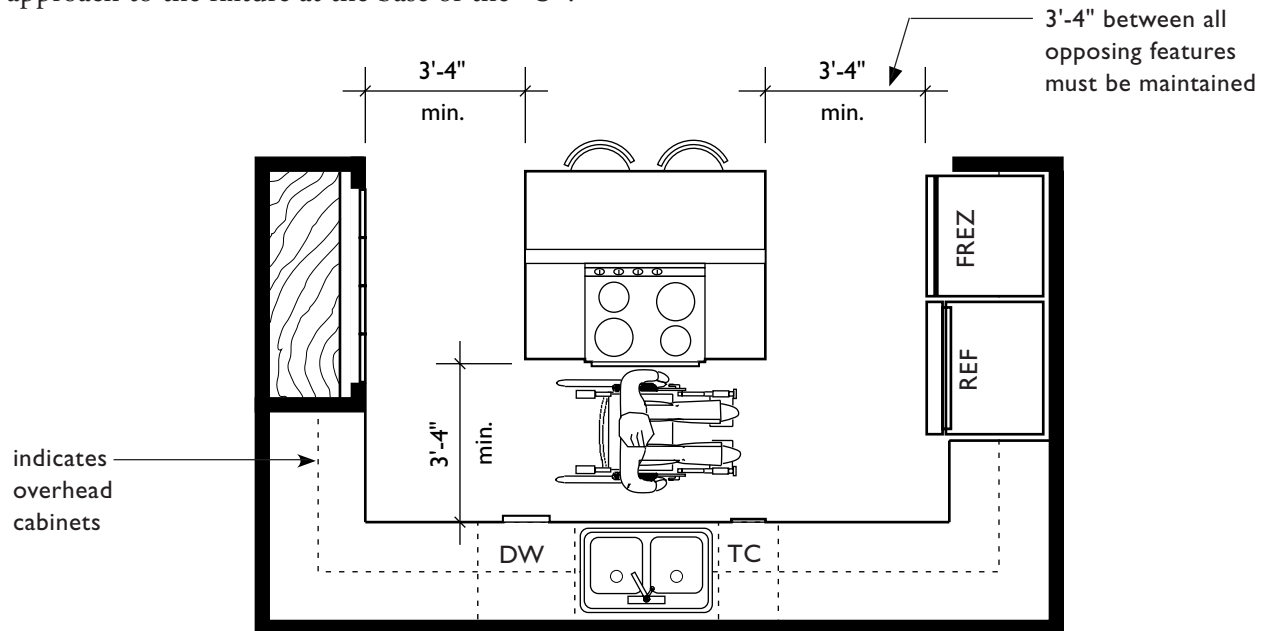
If a corner position with knee space below is being considered for either the sink or cooktop, it is preferred that the sink be located in the corner, as

opposed to the cooktop. This is because a cooktop with knee space below at the standard 36-inch height of a kitchen countertop is dangerous for seated users.



## Spacious U-Shaped Kitchen

While this kitchen has an overall “U” shape, it functions like a parallel wall kitchen with two points of entry and exit and allows close parallel approach to the fixture at the base of the “U”.



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■ **PART B:** Usable Bathrooms

**7b**



*...covered multifamily dwellings with a building entrance on an accessible route shall be designed and constructed in such a manner that all premises within covered multifamily dwelling units contain usable ...bathrooms such that an individual in a wheelchair can maneuver about the space.*

**Fair Housing Act Regulations, 24 CFR 100.205**

### Definitions from the Guidelines

**Bathroom.** A bathroom which includes a water closet (toilet), lavatory (sink), and bathtub or shower. It does not include single-fixture facilities or those with only a water closet and lavatory. It does include a compartmented bathroom. A compartmented bathroom is one in which the fixtures are distributed among interconnected rooms. A compartmented bathroom is considered a single unit and is subject to the Act's requirements for bathrooms.

**Powder Room.** A room with only a water closet (toilet) and lavatory (sink). (Definition found in Requirement 6.)

## INTRODUCTION

The Fair Housing Accessibility Guidelines (the Guidelines) provide specifications for bathroom design that make it possible for people who use mobility aids, and who, heretofore, could not even get into conventional bathrooms in multifamily housing, to now use such facilities. Though not fully accessible, when designed to comply with the Guidelines, these “usable” bathrooms provide a person who uses a wheelchair or scooter or who may use a walker or other mobility aid with a bathroom that has enough maneuvering space to allow the person to enter, close the door, use the fixtures, and exit. In some cases, a resident with a disability will find it necessary to make additional modifications to meet his or her specific needs.

In covered multifamily housing, bathrooms that meet the definition in the Guidelines for a bathroom must then meet the specifications outlined in the Guidelines for usable bathrooms. The Guidelines distinguish between bathrooms and powder rooms and provide different specifications (see definitions on facing page).

**Usable bathroom** specifications include:

1. an accessible route to and into the bathroom with a nominal 32-inch clear door opening (Requirements 3 and 4),
2. switches, outlets, and controls in accessible locations (Requirement 5),
3. reinforced walls to allow for the later installation of grab bars around the toilet, tub, and shower stall; under certain conditions provisions for reinforcing must be made in shower stalls to permit the installation of a wall-hung bench seat (Requirement 6),
4. maneuvering space within the bathroom to

permit a person using a mobility aid to enter the room, close and reopen the door, and exit (Requirement 7), and

5. maneuvering and clear floor space within the bathroom to permit a person using a mobility aid to approach and use fixtures; fixture dimensions and placement are specified only under certain conditions (Requirement 7).

**Powder rooms**, except as noted below, are only subject to the following specifications:

1. they must be on an accessible route with a nominal 32-inch clear door opening (Requirements 3 and 4) and
2. they must have switches, outlets, and controls in accessible locations (Requirement 5).

There is an **exception**, however, with respect to multistory dwelling units in buildings with one or more elevators. The level served by the building elevator must be the primary entry level for the dwelling unit and there must be either a usable bathroom or a usable **powder room** on the entry level. If there is both a bathroom and a powder room, then the bathroom would be required to be usable and meet Requirements 3 through 7 of the Guidelines. In cases where only a powder room is provided, then it must meet, in addition to Requirements 3, 4, and 5, the applicable provisions of Requirements 6 (Reinforced Walls) and 7 (Maneuvering and Clear Floor Spaces) of the Guidelines. The chart on page 7.35 summarizes the requirements for usable bathrooms and usable powder rooms.

Accessible route, usable doors, controls in accessible locations, and reinforced walls for later installation of grab bars are covered in other chapters of this manual. Maneuvering and clear

floor space requirements are explained in the first part of this chapter, followed by a presentation of a variety of bathroom floor plans that comply with the requirements of the Guidelines.

## **TWO BATHROOM SPECIFICATIONS**

To satisfy the maneuvering and clear floor space requirements for usable bathrooms, Requirement 7 of the Guidelines gives two sets of specifications to design bathrooms, referred to in this manual as Specification A and Specification B. Although not the only difference between the two specifications, a bathroom designed to meet Specification B has greater access to the bathtub than a bathroom designed to meet Specification A. The two specifications and their differences will be described in the following discussions of maneuvering and clear floor space requirements.

### **HOW MANY BATHROOMS AND FIXTURES MUST COMPLY WITH THE GUIDELINES?**

In dwelling units containing more than one bathroom, if Specification A is selected as the basis for designing a bathroom, all bathrooms in the dwelling unit also must comply with the A Specifications. If Specification B is selected, only one bathroom in the dwelling unit must meet those requirements; all other bathrooms in the dwelling unit must be on an accessible route (Requirement 4), have doors with a nominal 32-inch clear opening (Requirement 3), have switches, outlets, and controls in accessible locations (Requirement 5), and have reinforced walls around toilets, tubs, and shower stalls (Requirement 6). However, maneuvering space as specified in the Guidelines' Requirement 7 is not required in other bathrooms

within the dwelling unit when one bathroom is designed to meet the B Specifications.

However, any powder room provided in a dwelling unit, regardless of which set of specifications the bathroom(s) meets, is still subject to Requirements 3 (Usable Doors), 4 (Accessible Route), and 5 (Controls in Accessible Locations). The exception that requires certain powder rooms also to meet Requirements 6 (Reinforcing) and 7 (Maneuvering and Clear Floor Space) is discussed on page 7.33.

In bathrooms where several of each type of fixture are provided, e.g., a separate shower and tub or two lavatories, **all fixtures** must be usable in Specification A bathrooms while only **one** of each type of fixture must be usable by a person with a disability in a Specification B bathroom.

### **WHICH BATHROOM SHOULD MEET THE REQUIREMENTS OF THE GUIDELINES?**

*When a builder or developer is deciding whether to use the A or B Specifications when designing bathrooms, it is important to consider the number of bathrooms in the dwelling unit. If there is only one bathroom, the builder may follow the Specifications for either A or B. However, while not required by the Guidelines, it is recommended that Specification B, which provides the higher level of accessibility, be used.*

*In multiple bathroom dwelling units the issue is somewhat more complex. If the B Specification is selected for use in a two-bathroom dwelling, which bathroom should comply? The master or the hall bathroom? If the hall bathroom is selected to be the usable bathroom and the family member who has a disability would normally occupy the master bedroom, then he or she would have to go down the hall to that bathroom. If, on the other hand, the master bath is*

*the usable bathroom and the family member with a disability is one of the children, then it will be necessary for the child to continually enter the master bedroom suite.*

*Where there are two or more bathrooms, the ideal situation would be to have at least one bathroom*

*meet Specification B, and the other bathrooms meet Specification A. However, it is acceptable under the Guidelines to have only one bathroom meet Specification B, and the other bathrooms meet Requirements 3, 4, 5, and 6 of the Guidelines, but not Requirement 7. This discussion is advisory only.*

### **Bathroom Requirements for Covered Dwelling Units**

#### **All bathrooms as defined in the Guidelines must:**

1. be on an accessible route (Requirement 4),
2. have 32-inch nominal clear width doorways (Requirement 3),
3. have switches, outlets, and controls in accessible locations (Requirement 5),
4. have reinforcing around toilets, tubs, and showers (Requirement 6), and
5. meet Requirement 7, Specification A or B:

#### **Specification A**

If Specification A is used it applies to all bathrooms, and all fixtures in those bathrooms must be usable.

#### **Specification B**

If Specification B is used, it applies to one bathroom, and only one of each type of fixture must be usable; additional bathrooms in the unit are exempt **only** from maneuvering and clear floor space requirements at fixtures.

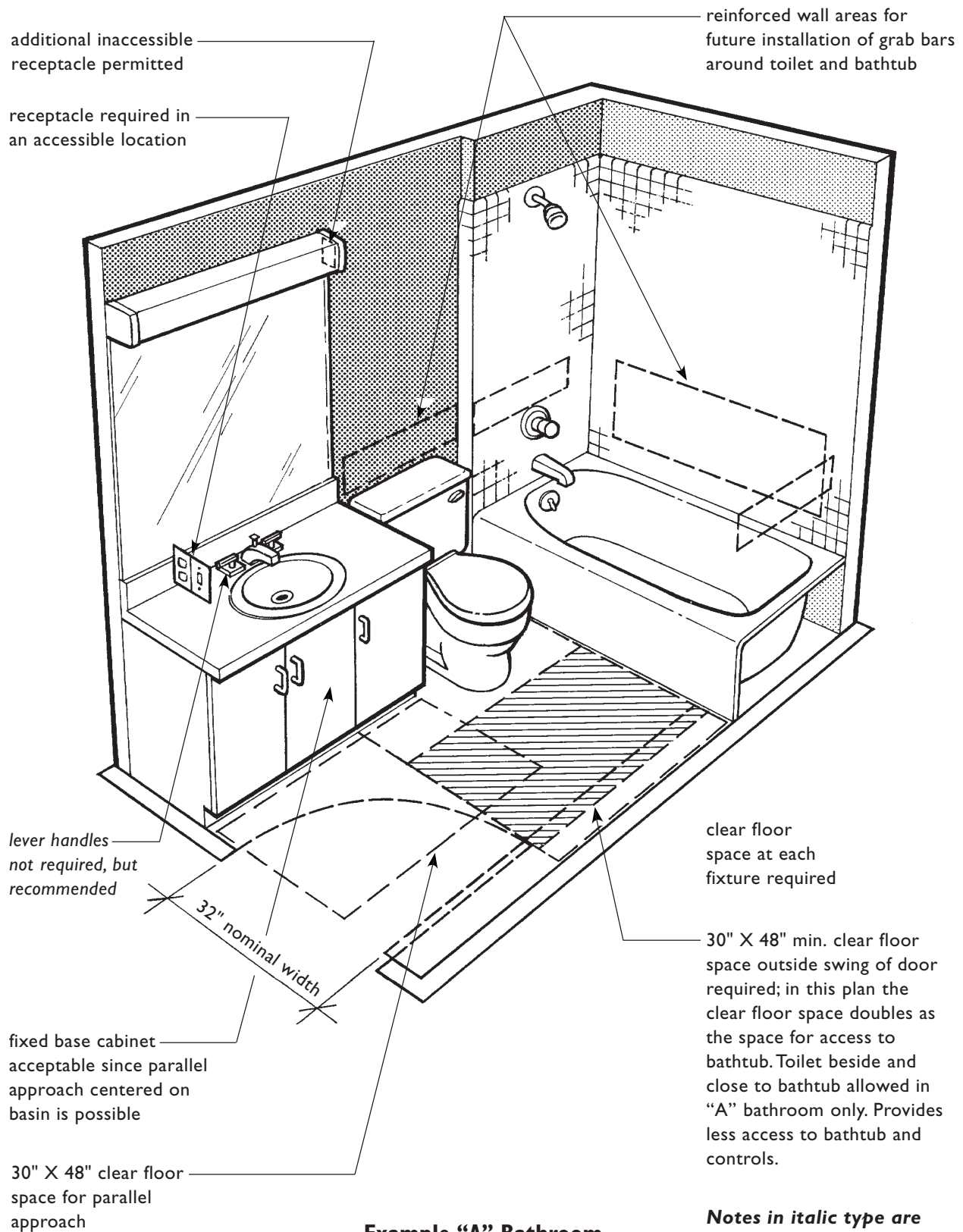
### **Powder Room Requirements for Covered Dwelling Units**

#### **Powder rooms must:**

1. be on an accessible route (Requirement 4),
2. have 32-inch nominal clear width doorways (Requirement 3), and
3. have switches, outlets, and controls in accessible locations (Requirement 5).

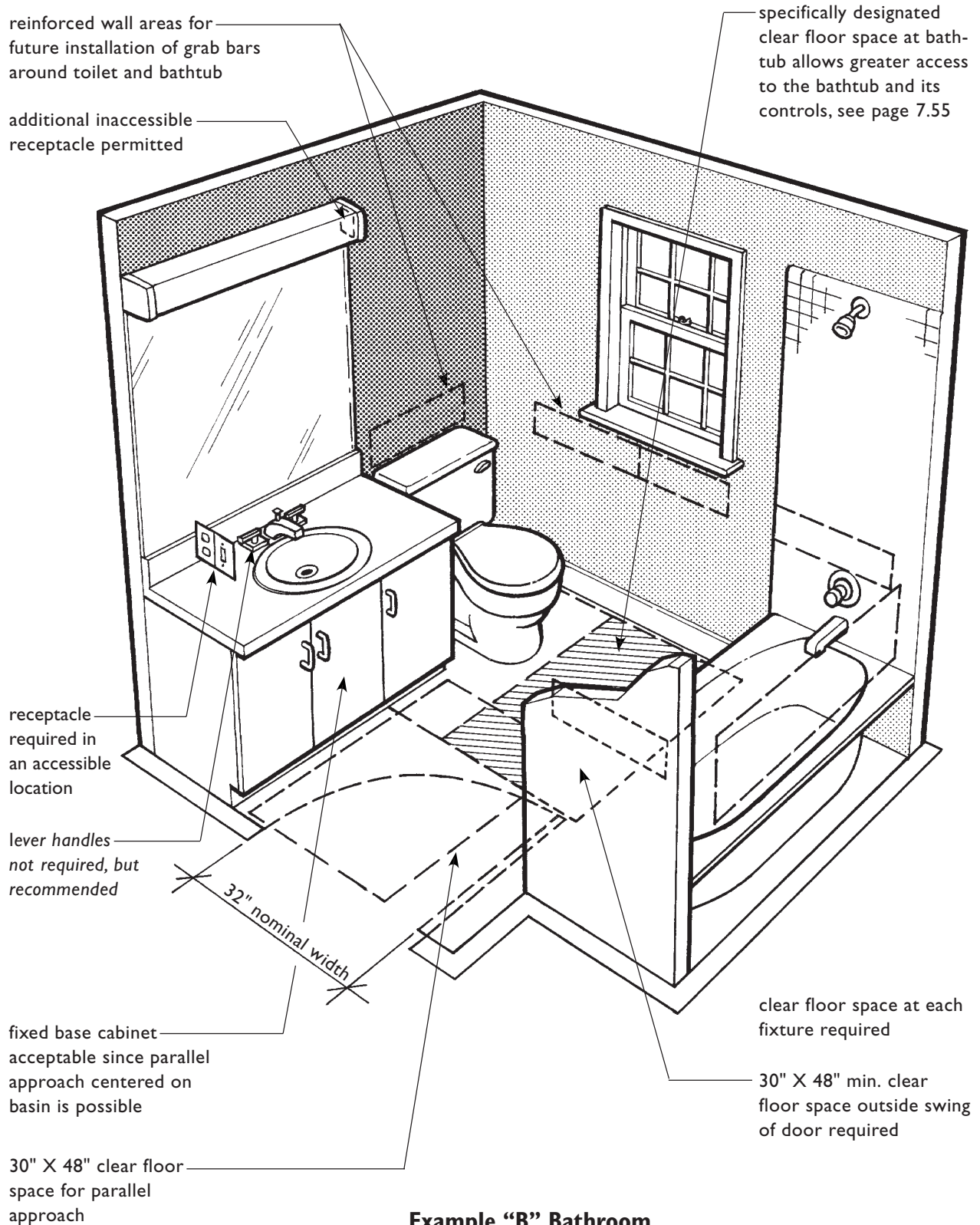
#### **Exception**

When the powder room is the only toilet facility on the entry level of a multi-story unit in a building with one or more elevators, it must, in addition to Requirements 3, 4, and 5, **meet the reinforcing specifications of Requirement 6 and the maneuvering and clear floor specifications of Requirement 7.**



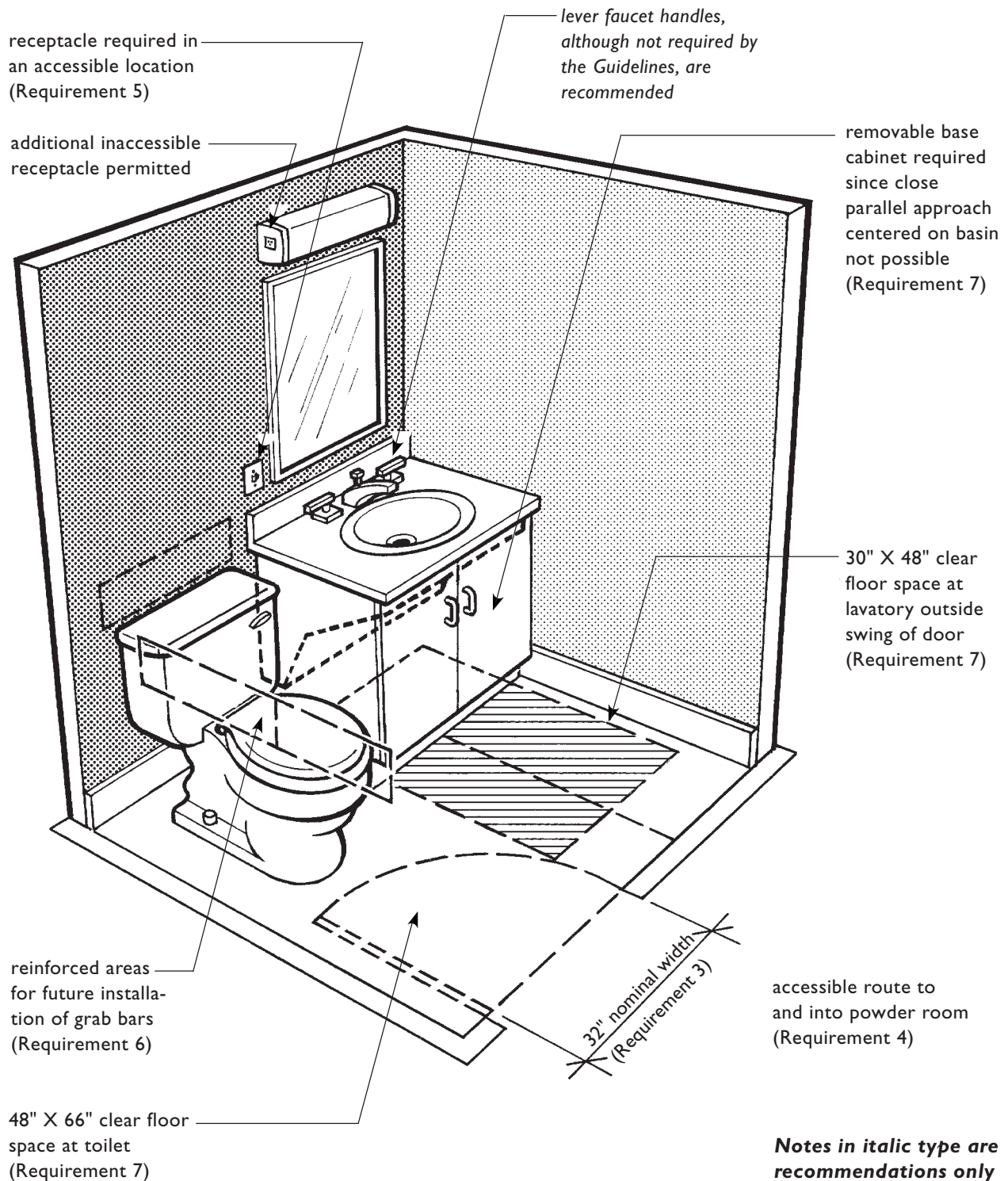
**Example "A" Bathroom**  
9'-4" X 5'-2"  
(See plan page 7.66)

*Notes in italic type are recommendations only and are not required by the Guidelines.*



**Example "B" Bathroom**  
**Greater Access to Bathtub**  
**6'-10" X 7'-9"**  
**(Similar to Plan on Page 7.67)**

*Notes in italic type are recommendations only and are not required by the Guidelines.*



**Usable Powder Room**  
5'-6" X 5'-8"  
(See Plan Page 7.81)

*Notes in italic type are recommendations only and are not required by the Guidelines.*

**Powder Room in Single-Story Dwelling Unit Must Meet Only Requirements 3, 4, and 5**

**Powder Room Must Meet Requirements 3, 4, 5, 6, and 7 When It Is the Only Toilet Facility on the Entry Level of a Multistory Unit in a Building with One or More Elevators**

## MANEUVERING SPACE IN BATHROOMS

The Guidelines offer two different wordings for the maneuvering space requirements for bathrooms complying with Specification A and Specification B. When applied, the requirements yield almost identical results. Neither Specification requires that the space for a five-foot circular turn or a T-turn (see page 19) be available so a user in a wheelchair would have the space necessary to turn around in the bathroom. However, there are very specific clear floor space requirements that have been adapted from the ANSI A117.1 - 1986 Standard to make it possible for many people with mobility disabilities to be able to use bathrooms designed to meet the requirements of the Guidelines.

When the maneuvering space requirements of both Specification A and B are analyzed carefully, the primary difference is that a clear floor space must be provided adjacent to the foot of the tub in Specification B bathrooms to increase access to the bathtub and the bathtub controls. To assist the reader in understanding the other differences in the two specifications, this manual will describe in detail bathroom elements and features as required by the Guidelines.

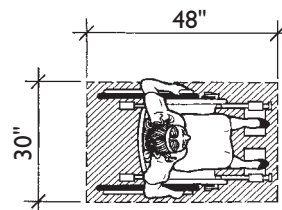
### **BOTH SPECIFICATION A AND SPECIFICATION B BATHROOMS REQUIRE THE FOLLOWING:**

**1. A 30-inch x 48-inch clear floor space outside the swing of the door as it is closed.** In bathrooms where the door swings out of the room all the clear floor spaces at fixtures still must be provided. In addition, the user must be able to reopen the door to exit.

**2. Usable bathroom fixtures.** Making bathroom fixtures usable in both Specification A and B

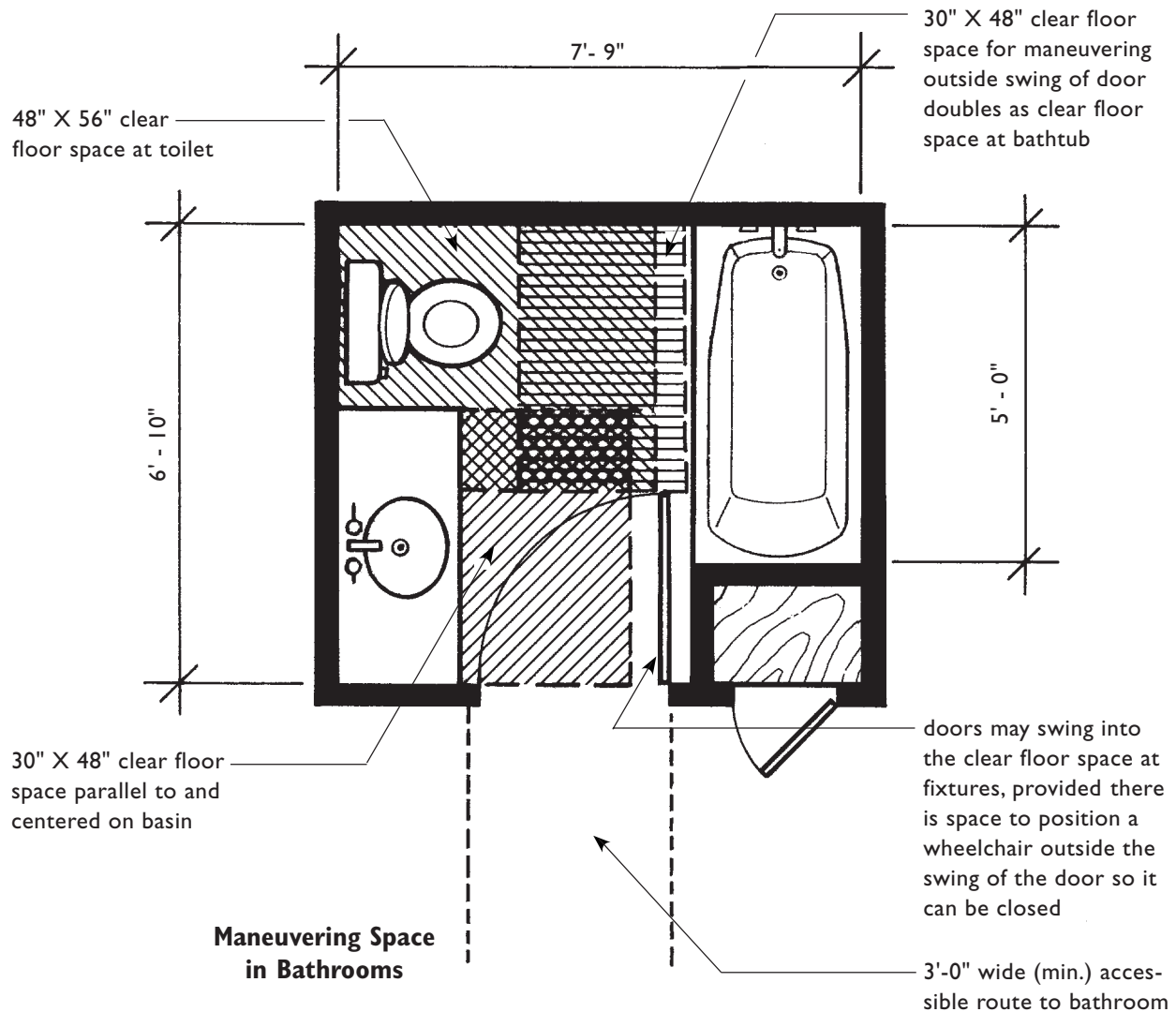
bathrooms involves providing certain clear floor space dimensions at each fixture and meeting certain requirements for the shower if the shower is the only bathing facility in the covered dwelling unit. In addition, Specification B sets additional requirements for bathroom fixtures such as providing clear floor space at the bathtub in a manner that allows greater access to the bathtub and meeting certain specifications on the installation of vanities and lavatories.

The maneuvering space necessary for usable bathrooms is thus made up of the combination of the designated clear floor spaces at fixtures and the presence of clear floor space outside the swing of the door. Clear floor spaces may overlap each other and the maneuvering space also may include knee or toe space under lavatories or toilet bowls. See the illustration at the top of page 7.40.



**Minimum Clear Floor Space  
for Person Using a Wheelchair**

The Guidelines contain no requirements for location or type of controls except in Specification B bathrooms, the controls must be located at the foot of the tub. There generally are no fixture specifications, except size of showers when they are the only bathing fixture in the unit and when knee space must be provided under lavatories. If the bathroom has sufficient space to allow a parallel approach centered on the lavatory, then standard base cabinets may be used below a lavatory. If not, a removable vanity cabinet is required so necessary knee space for a forward approach is available at the lavatory.



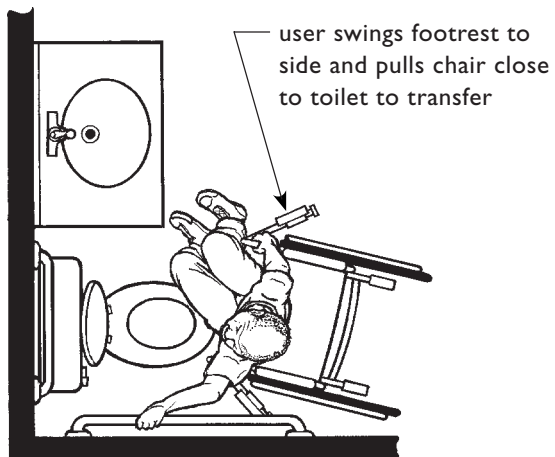
### CLEAR FLOOR SPACE AT TOILET FIXTURES

The clear floor space at toilets varies in size and is larger than the clear floor space for wheelchairs shown at other fixtures. Different amounts of clear floor space must be maintained around a toilet fixture depending upon the direction of approach, either front or side, to allow ease of use by persons using wheelchairs.

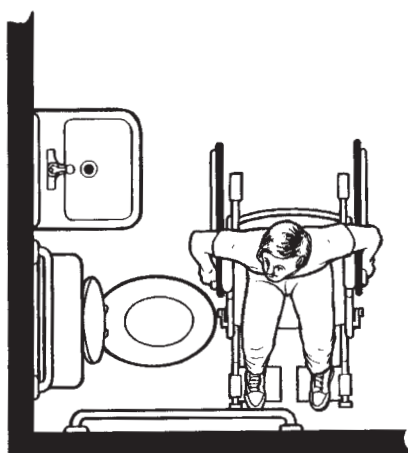
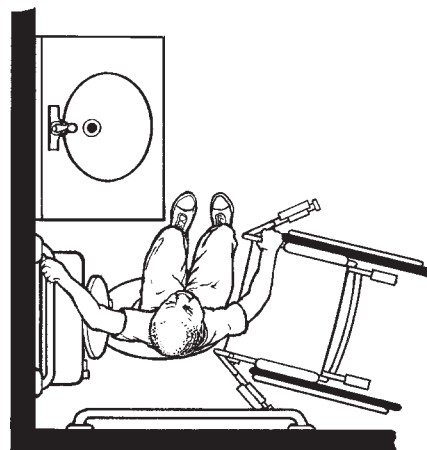
Many people who use wheelchairs are unable to stand while transferring from a wheelchair to the toilet. Some people can transfer to and from the toilet from only one side. Others can

complete right, left, or front transfers. The technique used depends on which approach is most familiar, easiest, and safest to complete.

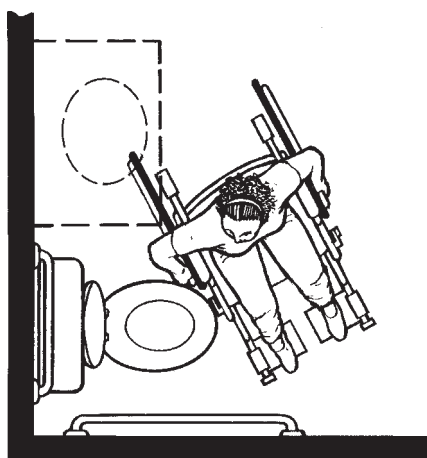
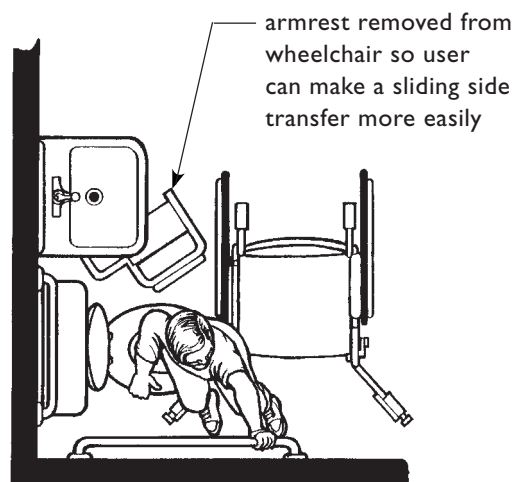
The unobstructed clear floor space required by the Guidelines allows a wheelchair user to approach the toilet and transfer onto the fixture using a variety of independent and assisted transfer techniques. The transfer techniques most commonly used are the forward, perpendicular, diagonal, reverse diagonal, and parallel. Whenever possible, it is best to position the toilet to allow forward, perpendicular, and diagonal approaches.



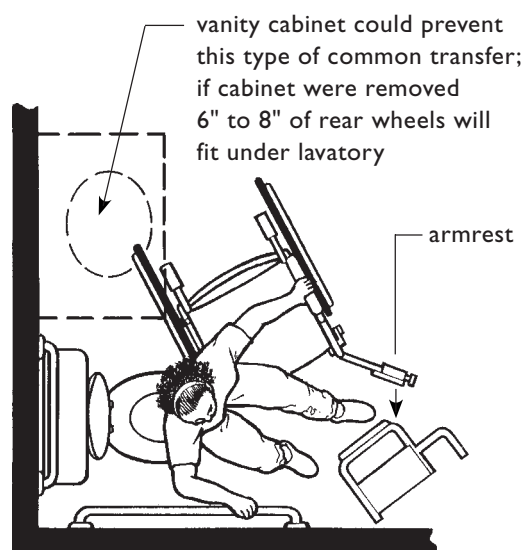
**Forward Approach**  
(Front Transfer)

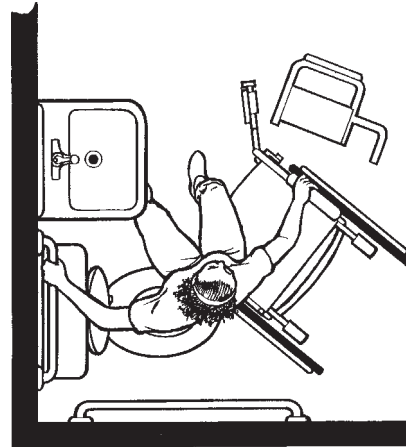
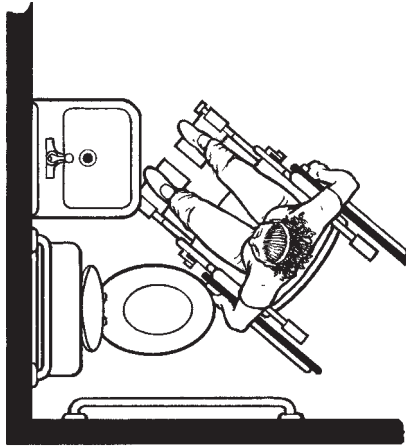


**Perpendicular Approach**  
(Side Transfer)

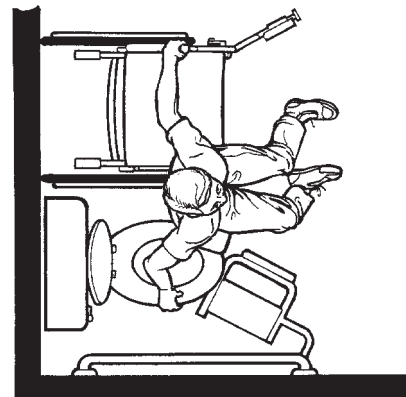
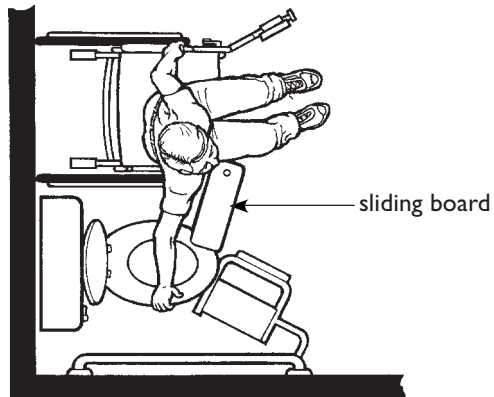


**Diagonal Approach**  
(Probably Most Frequently Used Unassisted Transfer Technique)

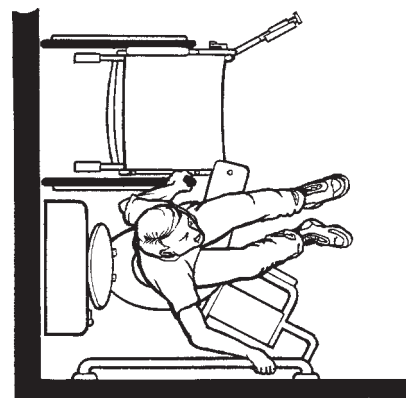




**Reverse Diagonal Approach  
(Diagonal Transfer)**



**Parallel Approach  
(Side Transfer Using Sliding Board)**



**ONE OF THREE CLEAR  
FLOOR SPACES REQUIRED IN  
BOTH A AND B BATHROOMS**

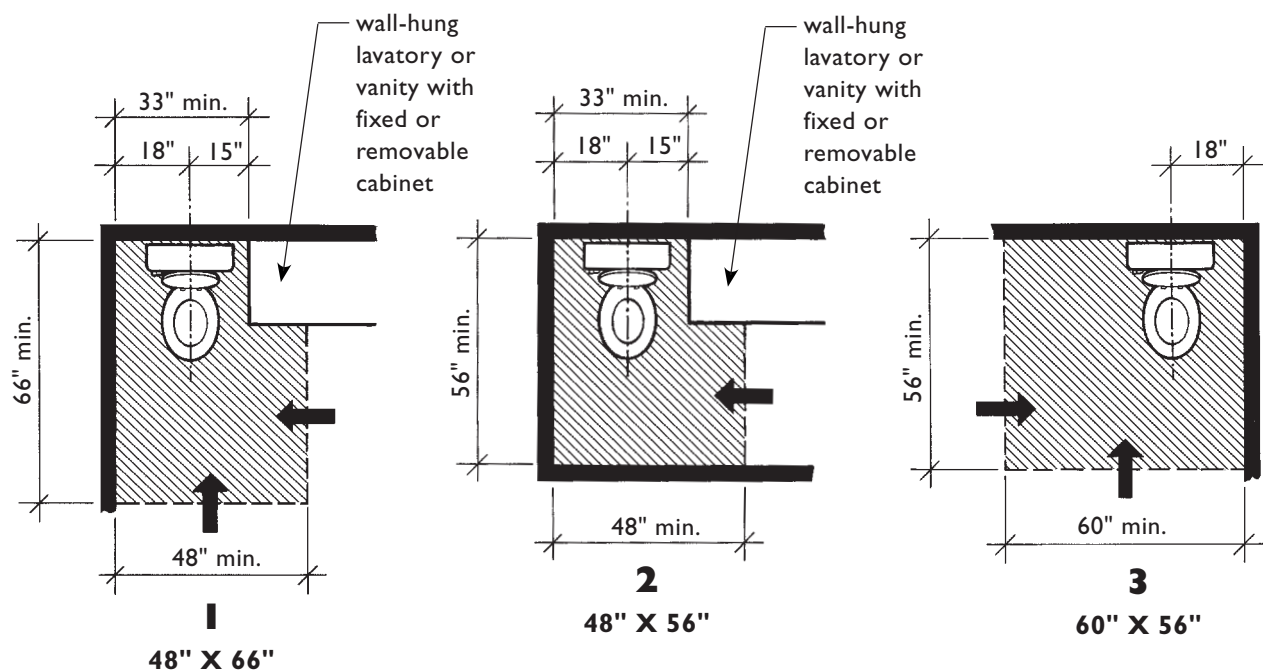
When planning both Specification A and B bathrooms, one of the following three clear floor spaces must be provided at toilets to allow people using wheelchairs and walkers to maneuver, approach the seat, and make a safe transfer onto the toilet. The clear floor space dimensions are to be applied or superimposed over a plan during the design process to determine if space requirements at toilets are being met.

In the plans shown below to illustrate the clear floor space options at toilets, the arrows pointing in toward the clear floor space are indicating the direction of approach to the toilet by a person using a wheelchair. In plans one and two, the incomplete box at the right of the toilet may be

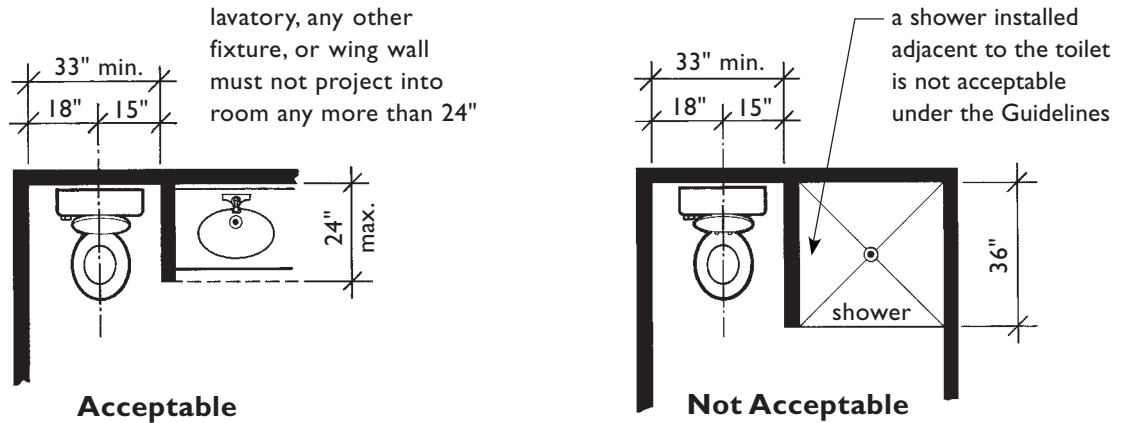
either a wall-hung lavatory or a countertop lavatory. Depending upon the placement of the other bathroom fixtures and the clearances in that room, any vanity cabinet may be fixed or may be required to be removable.

The Guidelines allow a countertop lavatory, with either a removable or fixed base cabinet, to be a maximum depth of 24 inches. A wing or privacy wall also may overlap the clear floor space; however, it, too, is restricted to a length of 24 inches and must be at least 33 inches from the opposite wall. In a compartmented bathroom, the 33-inch dimension would have to be increased. See the example on page 7.71.

In terms of accessibility or usability of the toilet, from left to right, diagram number one offers a middle level of usability, number two offers the lowest level, and number three, the highest.



**Clear Floor Space at Toilets**  
(One of the Three Must be Provided in “A” and “B” Bathrooms)



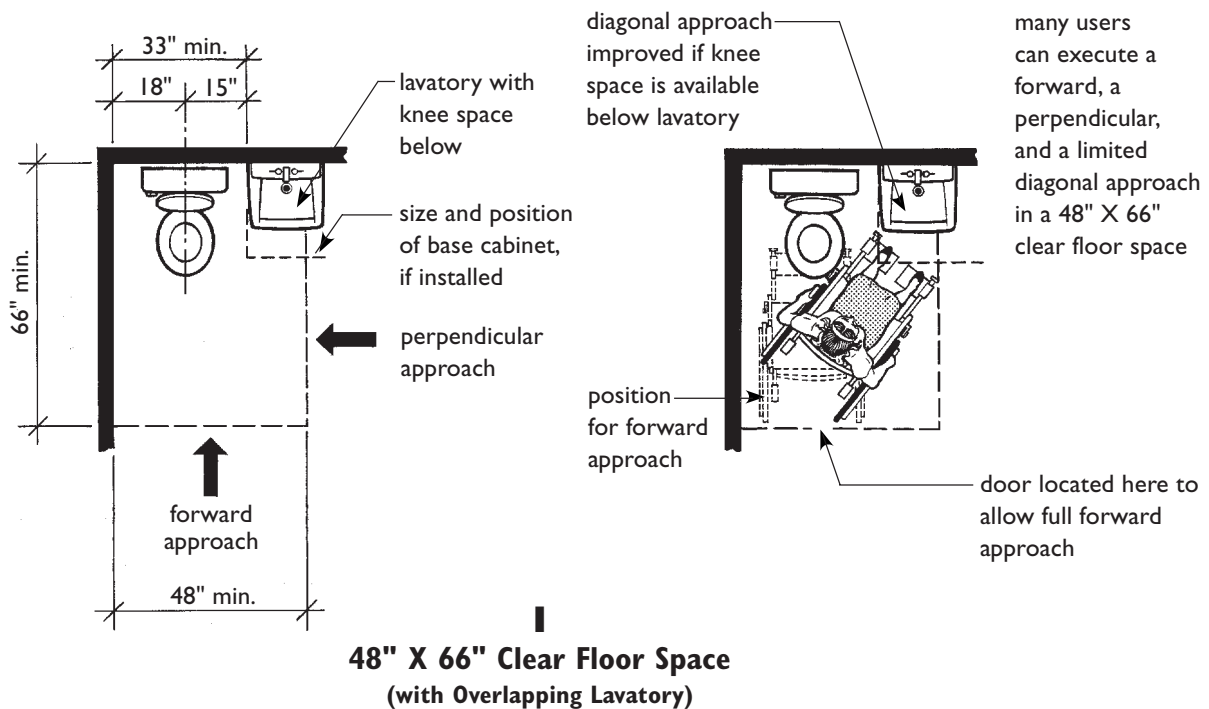
**Some Features May Overlap Clear Floor Space at Toilet**

## 48-INCH X 66-INCH CLEAR FLOOR SPACE

To provide space for a forward approach when a lavatory is adjacent to the toilet, the clear floor space must be a minimum of 66 inches long. The door is located opposite the toilet to provide the maneuvering space necessary to execute a forward approach to the toilet (see bottom right illustration).

The user may slide the wheelchair footrests under the toilet bowl or will swing them to either

side of the toilet to pull in closer to the bowl to execute a front transfer. The space for a perpendicular approach is actually wider than in clear floor space number two. An added benefit of the 48-inch x 66-inch clear floor space is that a limited version of the commonly used diagonal approach to the toilet also is possible.

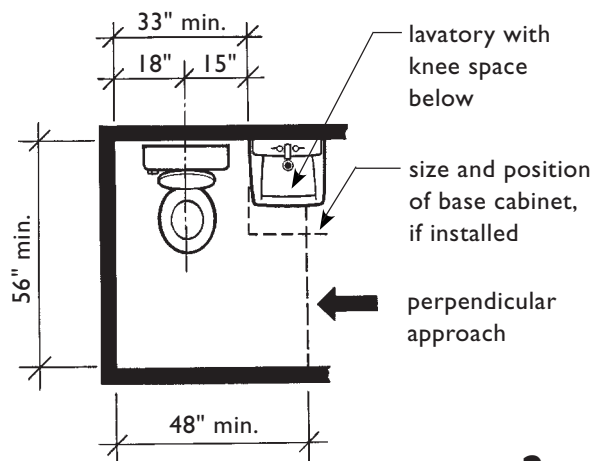


## 48-INCH X 56-INCH CLEAR FLOOR SPACE

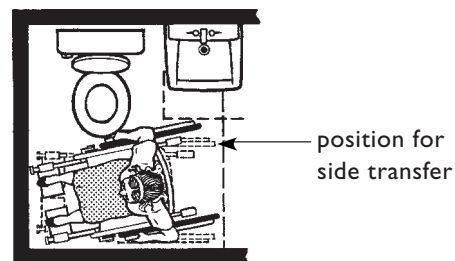
The 48-inch x 56-inch clear floor space enclosed on three sides is the minimum space in which a person using a wheelchair will be able to get close enough to make a side or perpendicular approach to the toilet. The 48-inch dimension is consistent with the length of the minimum clear floor space for wheelchairs. A person wishing to make a right transfer will approach the toilet head on as shown in the lower right illustration, or depending upon preference, the user may wish to back into the clear floor space to execute a left transfer.

The 56-inch dimension may allow some users to angle their wheelchair slightly to execute a

safer transfer onto the toilet. This angled position is improved if the lavatory is open below. The Guidelines do not require that this additional maneuvering space be provided for access to toilets, but it can be accomplished with the installation of a lavatory with a removable base cabinet. As much as six to nine inches of the large wheels on a manual wheelchair (somewhat less for power wheelchairs) can be positioned under the lavatory. Removable base cabinets are required in other situations and will be discussed in the next section on “Clear Floor Space at Lavatories.” See page 7.47.



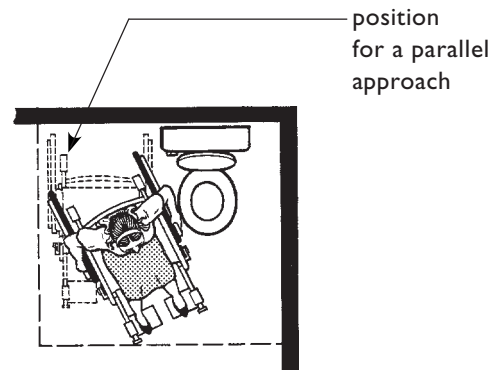
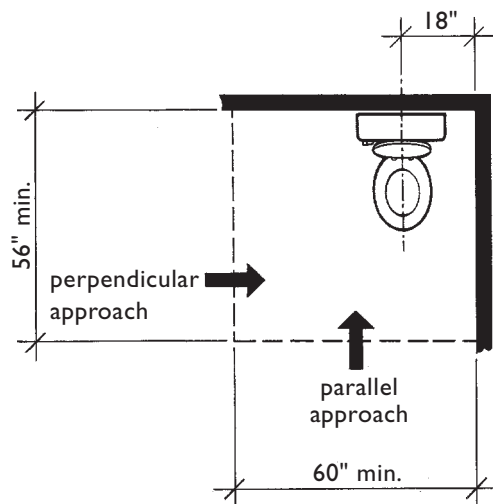
the primary approach that can be executed in a 48" X 56" clear floor space is perpendicular



**2**  
**48" X 56" Clear Floor Space**  
**(with Overlapping Lavatory)**

## 60-INCH X 56-INCH CLEAR FLOOR SPACE

This clear floor space, minus the lavatory, is the same length as at toilet clear floor space number two, but its width is increased by 12 inches. Its shape and size permit a large variety of transfer positions to be assumed by someone using a wheelchair or scooter, including parallel, perpendicular, and diagonal approaches. However, a forward approach as shown at clear floor space number one is not possible unless the depth of this space is increased to 66 inches. The 60-inch x 56-inch clear floor space has added value in that it has sufficient space so someone could assist a person using a wheelchair in making a transfer.



many users can execute a parallel, a perpendicular, and a diagonal approach in a 60" X 56" clear floor space

**3**  
**60" X 56" Clear Floor Space**  
**(with No Overlapping Elements)**

### CLEAR FLOOR SPACE AT LAVATORIES

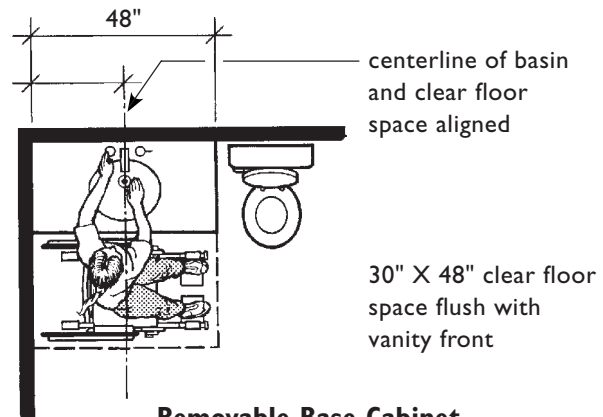
A 30-inch x 48-inch clear floor space is required at the lavatory so a person who uses a wheelchair or scooter can get close enough to the basin and controls to use the fixture. When knee space is not provided for a forward approach, this 30-inch x 48-inch clear floor space must be parallel to the cabinet or counter front and centered on the basin.

Either a countertop lavatory with a vanity cabinet or a wall-hung lavatory may be installed in Specification A and B bathrooms. There are no specifications for control location or type nor for drain location. The lavatory type and width, plus the available maneuvering space in the room, determines whether or not a vanity cabinet must be removable.

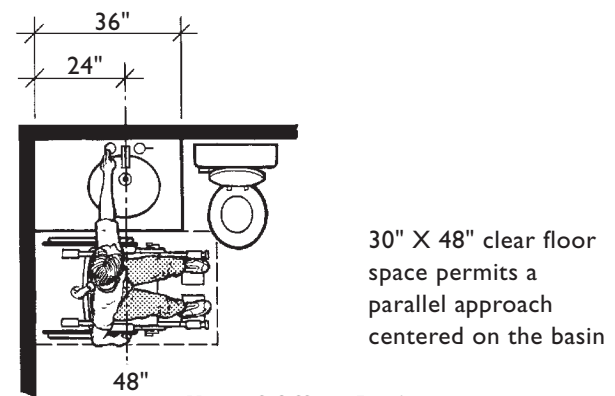
To economize on floor space the basin may be offset so the length of the countertop may be less than 48 inches. In 36-inch wide countertops, the basin may be offset provided it remains centered on the required 48-inch long clear floor space.

If a lavatory must be installed where space does not permit a close parallel approach with the 30-inch x 48-inch clear floor space centered on the basin, the centerline of the basin must be at least 15 inches from an adjoining wall or fixture. It must have knee space at least 30 inches wide to allow a user to execute a forward approach into clear floor space beneath the fixture.

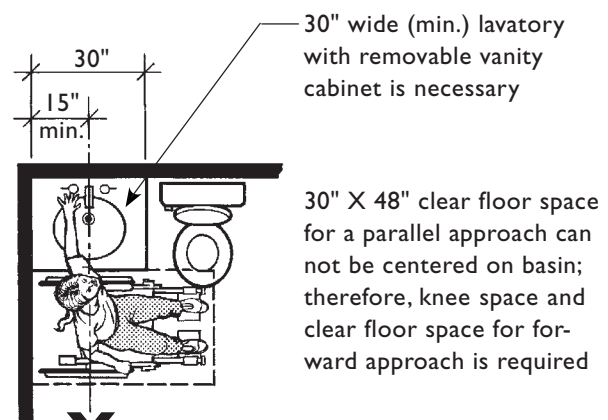
Knee space must be provided below narrow lavatories lacking this parallel and centered approach, because, if not, the user must make an awkward and often impossible, painful twisting motion over the side of the wheelchair to reach the faucet handle that is positioned somewhat behind one shoulder. In addition, it is difficult from this position to wash both hands, lean over the basin to clean teeth, etc. Information on removable base cabinets and knee space is given on page 7.49.



**Removable Base Cabinet  
Not Required Because Clear Floor Space  
Centered on Basin  
(Applicable in A and B Bathrooms)**



**Use of Offset Basin  
to Reduce Lavatory Length  
(Applicable in A and B Bathrooms)**



**X Not Acceptable for Parallel Approach  
Removable Base Cabinet Must Be Provided  
Because Clear Floor Space Can Not Be Centered  
(Required in A and B Bathrooms)**

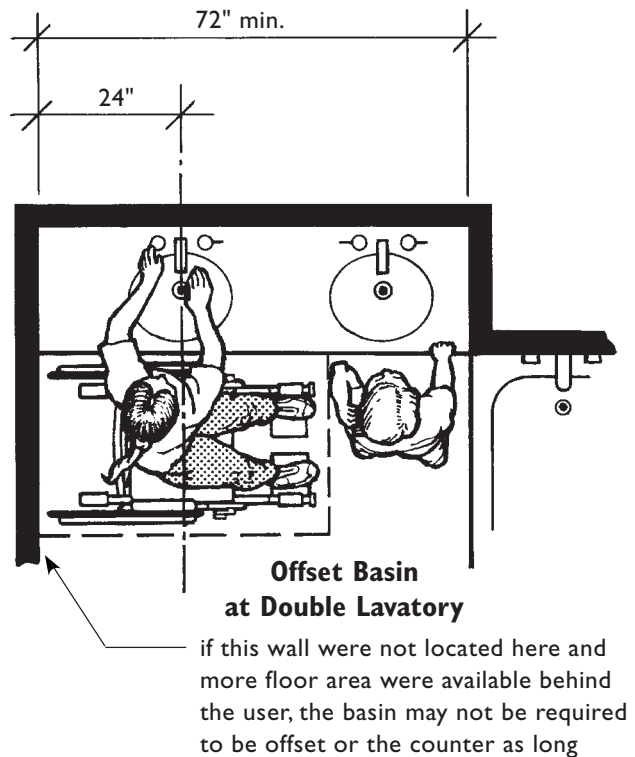
### Double Basin and Pedestal Lavatories

It is also possible to install double basin lavatories and pedestal lavatories so they meet the requirements of the Guidelines. Countertops for double basin lavatories vary in length and may be as short as 60 inches.

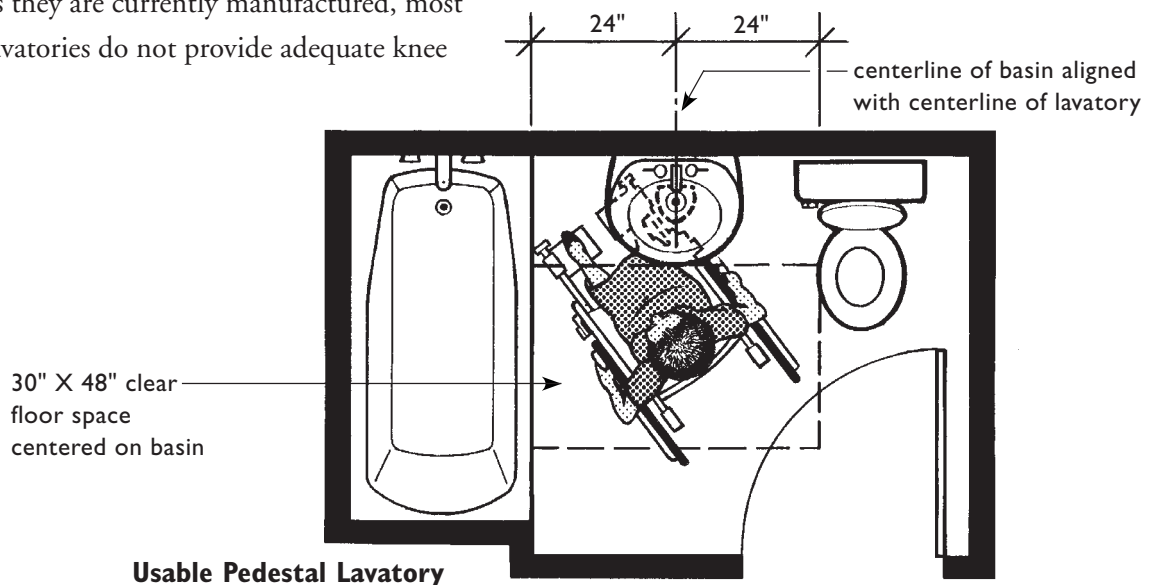
Where two basins are planned for installation in a 60-inch long countertop, and especially where obstructions such as a wall and bathtub (as shown in the illustration at right) enclose the available maneuvering space, a forward approach with a removable vanity cabinet should be used. However, in this illustration the countertop is 72 inches long and the person using a wheelchair can be parallel and centered on the basin.

Pedestal lavatories are manufactured with a variety of pedestal widths and depths. They can be installed in bathrooms covered by the Guidelines, provided a parallel approach centered on the basin can be made. Giving the appearance of having knee space, unlike a removable base cabinet where the knee space can be constructed to specific design parameters, pedestal lavatories have no removable element.

As they are currently manufactured, most pedestal lavatories do not provide adequate knee



space to allow a user to make a head-on or forward approach. If pedestal lavatories are installed with the 30-inch x 48-inch clear floor space centered on the basin, a user may execute a variety of approaches. Angled approaches are possible provided adjacent fixtures do not interfere.



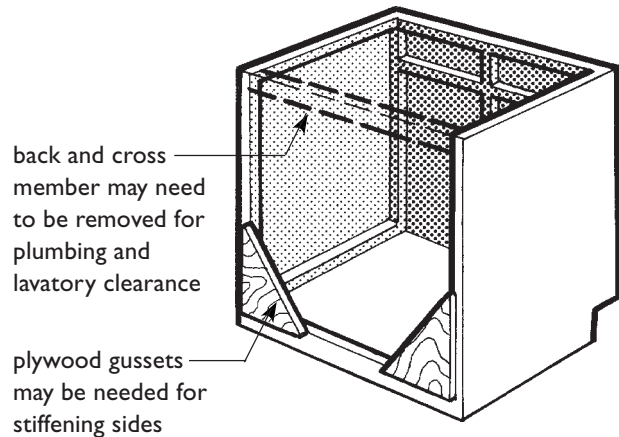
### Removable Vanity Cabinets

Knee spaces are particularly important in bathrooms that are small and have limited maneuvering space. It is especially critical where a close parallel and centered approach cannot be provided at the lavatory basin. When knee space is necessary for a bathroom to be usable, that space must be provided at the time of initial construction. However, it may be concealed by a vanity cabinet that, when removed, will expose knee space. When the cabinet is in place a more common appearance is maintained and storage is provided. As in kitchens, finishes on the floor and walls in the knee space must be installed during initial construction so no additional finish work is required when the vanity cabinet is removed.

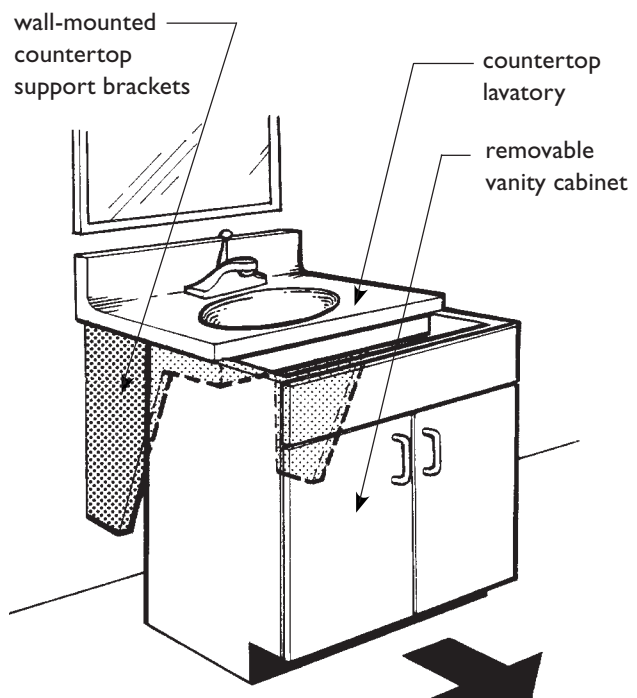
When a removable vanity cabinet is installed, the countertop and lavatory can be supported by wall-mounted brackets that fit inside the cabinet. These brackets are hidden when the base cabinet is in place; once the cabinet is removed, the brackets are exposed.

Unfortunately, removable vanity cabinets are not yet part of manufacturers off-the-shelf product lines. With growing demand, some of the commercial manufacturers are beginning to produce prototypes that should result, in the near future, in mass marketed lavatories with removable base cabinets.

Standard vanity cabinets may be modified and used as removable cabinets. The cabinet back or back supports may need to be cut down to clear the support system and to provide clearance for water lines, valves, and drain pipes. If the back of the cabinet is removed or significantly modified, the sides may have to be reinforced.



**Standard Base Cabinet  
Modified to Be Removable**



**Removing Vanity Cabinet  
to Expose Knee Space**

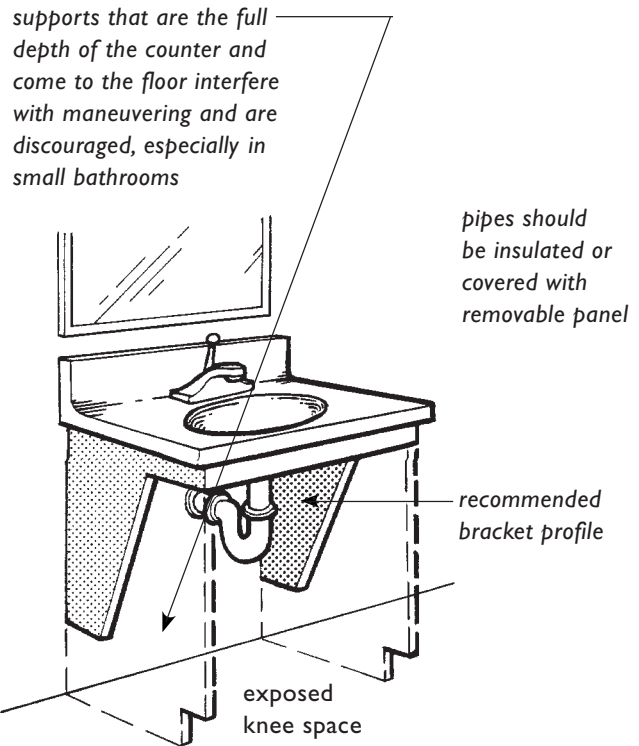
Any brackets used to support countertop lavatories should not interfere with maneuvering space within the bathroom; this is especially critical in small bathrooms where maneuvering space is at a minimum. The angled bracket shown in this series of illustrations is held away from the floor and is based on the ANSI knee space requirements. Use of a similarly designed bracket is strongly recommended.

Supports that are the full depth of the counter that go to the floor are discouraged at narrow lavatories but are acceptable for wider lavatories where it is assumed that more floor area will be available for maneuvering. Where supports extend to the floor, at least 30 inches must be provided between them to allow maneuvering space for a forward approach to the lavatory. This may require that some vanity cabinets be wider than 30 inches, so when the cabinet is removed and the concealed supports are exposed, 30 inches is provided between them.

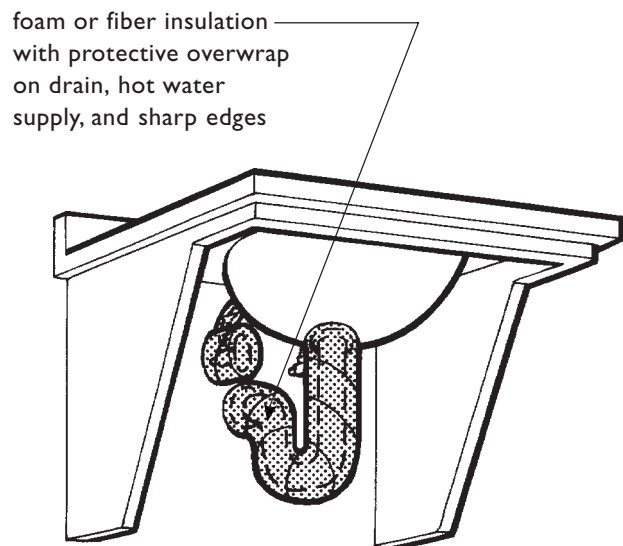
#### Pipe Protection at Knee Space

Plumbing below the lavatory should be covered to prevent burns and abrasions. This can be done by using removable insulation to cover the hot water pipe and the drain, or by adding a fixed, one-piece cover.

The most economical method of providing protection from hot pipes and sharp surfaces is to wrap them with insulation. Although this solution is effective, it is often difficult to maintain the insulation; it may be removed when repairs are made and either is difficult to rewrap due to loss of adhesion or is not replaced at all.



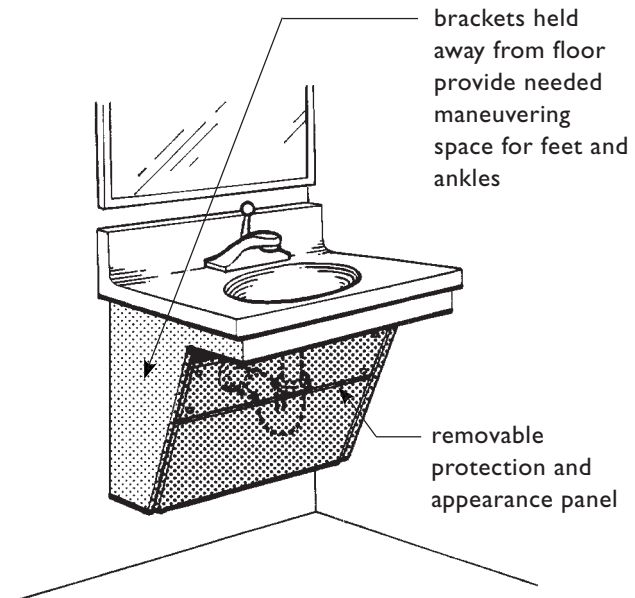
**Exposed Knee Space Under  
Bracket-Supported Countertop Lavatory**



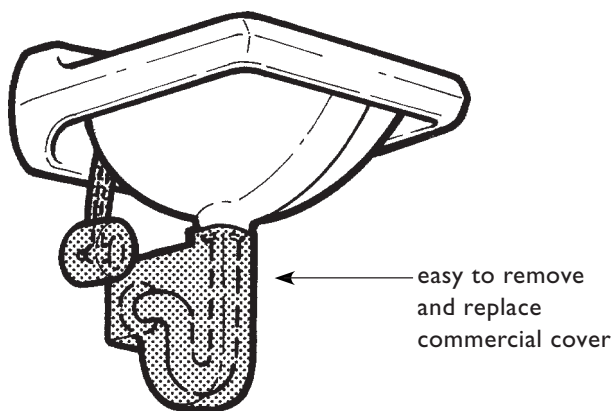
**Lavatory with Removable  
Insulation Pipe Protection**

A reasonably priced aesthetic and functional improvement is possible with the installation of a commercially available or custom-made pipe cover. These pipe covers should be designed and installed so they are easy to remove and replace when the drain trap or valves need repair.

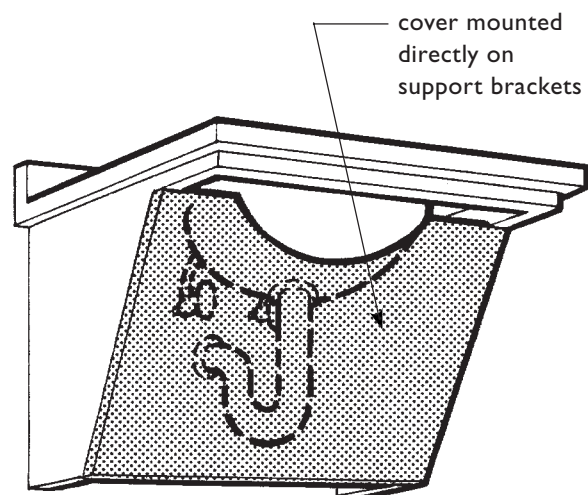
For countertop lavatories, an appearance and protection panel that covers the water pipes and drain can be mounted directly to the support brackets. Such a panel can be removed easily to service pipes, and unlike wrapped insulation, retains a more aesthetically pleasing appearance. It is recommended that the insulation or protection be installed at the time of construction. The shape of the knee space influences the design of any pipe protection method and is considered in the next section.



**Countertop Lavatory with Wall Brackets and Appearance and Protection Panel**



**Lavatory with Removable Cover for Pipe Protection**

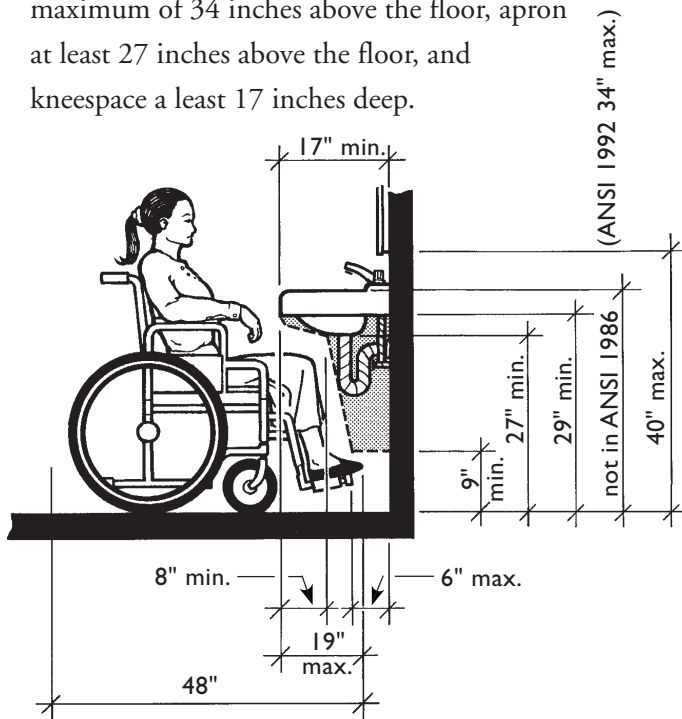


**Preferred Appearance and Protection Panel**

## Knee Space Design

Knee space dimensions are specifically delineated in the Guidelines for lavatories in Specification B bathrooms. However, in Specification A bathrooms, “if parallel approach is not possible within the space, any cabinets provided would have to be removable to afford the necessary knee clearance for forward approach.” [Guidelines Requirement 7 (2) (a) Note]

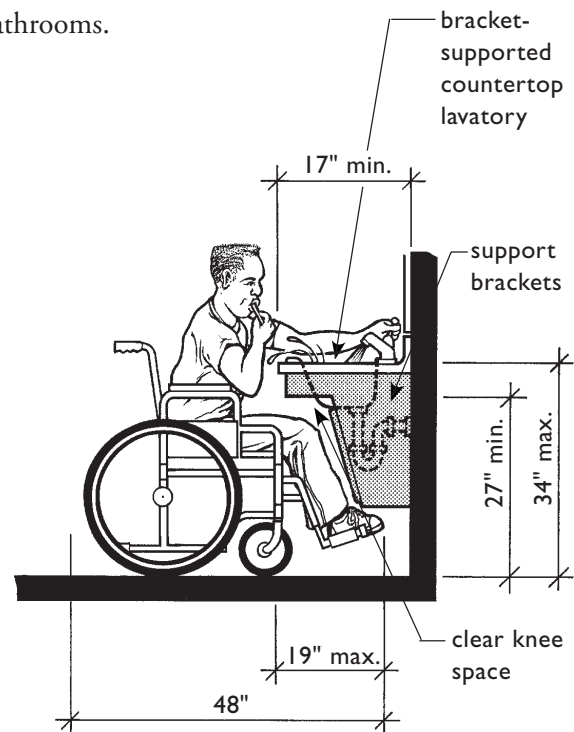
In Specification A bathrooms, knee space must be at least 17 inches deep, but only 19 of the 48 inches of clear floor space required for the perpendicular approach may extend under the lavatory. While the Guidelines do not provide further specifications for knee space, it is recommended that ANSI A117.1 be followed. The specific requirements given in the Guidelines for knee space in Specification B Bathrooms include: centerline of the fixture at least 15 inches from an adjoining wall or fixture, top of fixture rim a maximum of 34 inches above the floor, apron at least 27 inches above the floor, and kneespace a least 17 inches deep.



**ANSI 1986 Requirements at Knee Space  
(Guidance for Knee Space in A Bathrooms)**

In both ANSI and the Specification B bathroom requirements, only 19 inches of the 30-inch x 48-inch clear floor space may extend under a lavatory. Seventeen inches is the minimum depth allowed for either a wall-hung or a countertop lavatory. This ensures that the basin extends sufficiently so a wheelchair user’s feet do not strike the wall on which the fixture is mounted before his or her torso is close enough to the front of the lavatory to be able to reach the controls and use the basin.

The dimensions given in the Guidelines for Specification B bathrooms are consistent with those found in the ANSI Standard. They do not completely define the shape of the knee space, and it is recommended that builders/developers follow the ANSI Standard when knee space must be provided in either Specification A or Specification B bathrooms.



**Knee Space at Lavatories that Meets the  
Requirements for B Bathrooms**

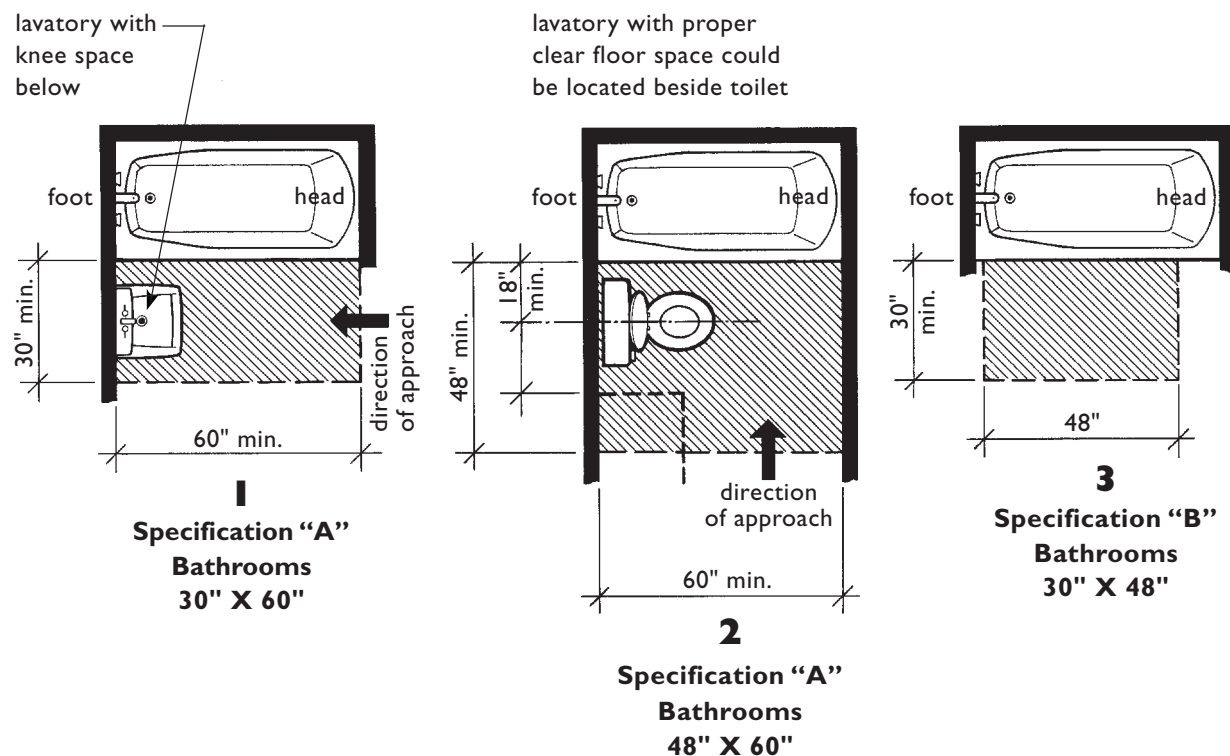
## CLEAR FLOOR SPACE AT BATHTUBS/SHOWERS

The following discussion of bathtubs focuses on bathing fixtures that are a combination of bathtub and shower. It does not cover showers that are separate bathing fixtures; these will be addressed starting on page 7.56.

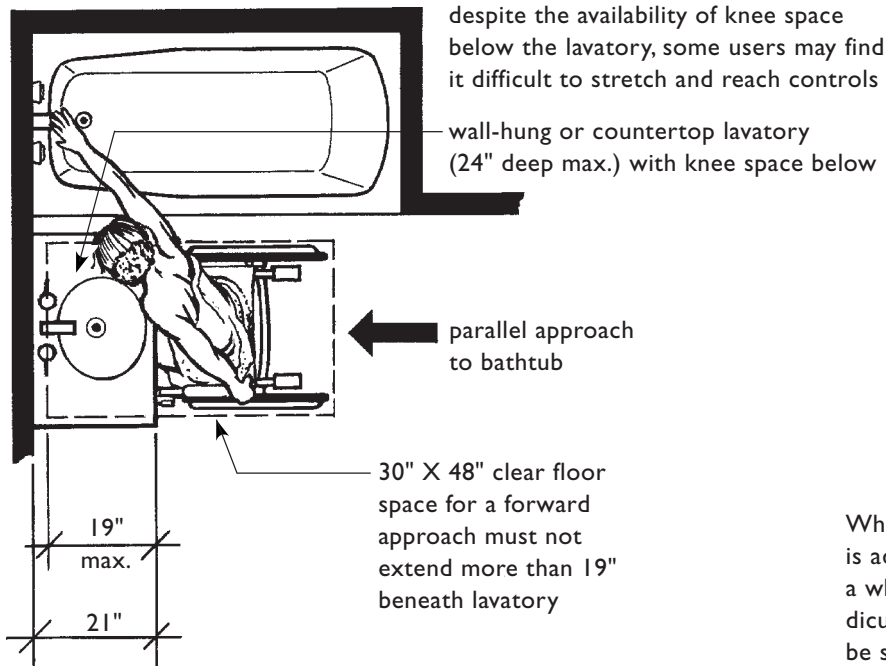
The Guidelines require that one of three different clear floor spaces be provided at bathtubs so people who use wheelchairs or scooters can get close enough to execute transfers into and out of bathtubs. The diagrams below, taken from the Guidelines, show the clear floor space requirements for bathtubs; numbers one and two apply to Specification A bathrooms and number three to Specification B bathrooms.

In all three clear floor spaces, the shaded areas must remain clear, except that in clear floor space diagram number 2, a lavatory that meets all applicable clear floor space requirements for lavatories may be located next to the toilet. In Specification A bathrooms, either a lavatory or a toilet may encroach upon the clear floor space next to the bathtub.

In clear floor space diagram number one, the arrow indicating direction of approach is relevant only if the lavatory is wall-hung and has knee space below. The user pulls forward into the knee space to transfer and/or operate controls, see illustration on the top of the next page.



**Clear Floor Space at Bathtubs/Showers**  
**Shaded Areas Must Remain Unobstructed**  
 (Taken from Guideline Figures 7(b) and 8)

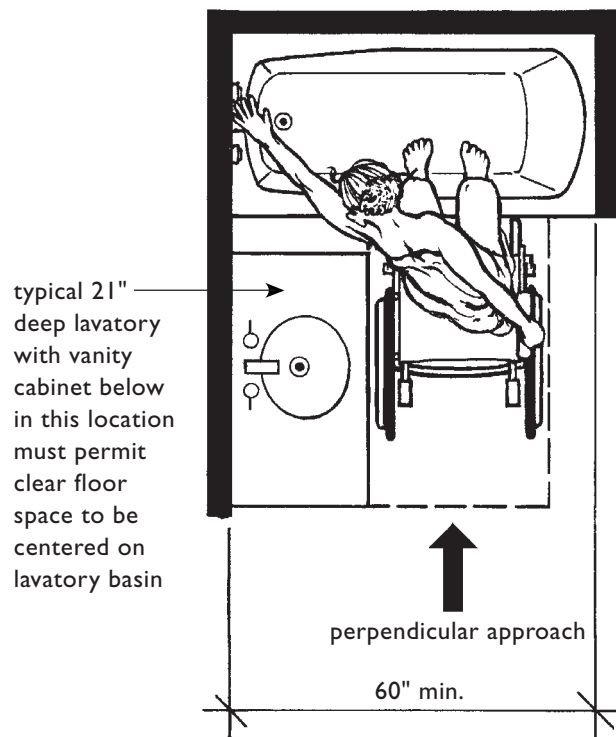


**Parallel Approach to Bathtub at Lavatory with Knee Space Permitted in Specification A Bathrooms**

If a countertop lavatory with a vanity cabinet is located adjacent to the bathtub, a person using a wheelchair must be able to execute a close parallel approach centered on the basin. If the lavatory does not afford a full parallel approach to the basin, knee space and clear floor space for a forward approach are required, and any cabinets would have to be removable.

When the lavatory with vanity is adjacent to a bathtub, reach to the controls is possible only from a perpendicular approach which may be difficult for some wheelchair users. To improve access to controls, a resident who uses a wheelchair could have a new vanity with knee space installed or have controls repositioned closer to the tub rim.

When a lavatory with vanity cabinet is adjacent to tub, a person using in a wheelchair must make a perpendicular approach to the tub rim to be sufficiently close to operate the controls. The user will have to remove footrests, place feet in tub, and execute a stretch which may be difficult for some people.



**Perpendicular Approach to Bathtub at Vanity Cabinet Permitted in Specification A Bathrooms Only**

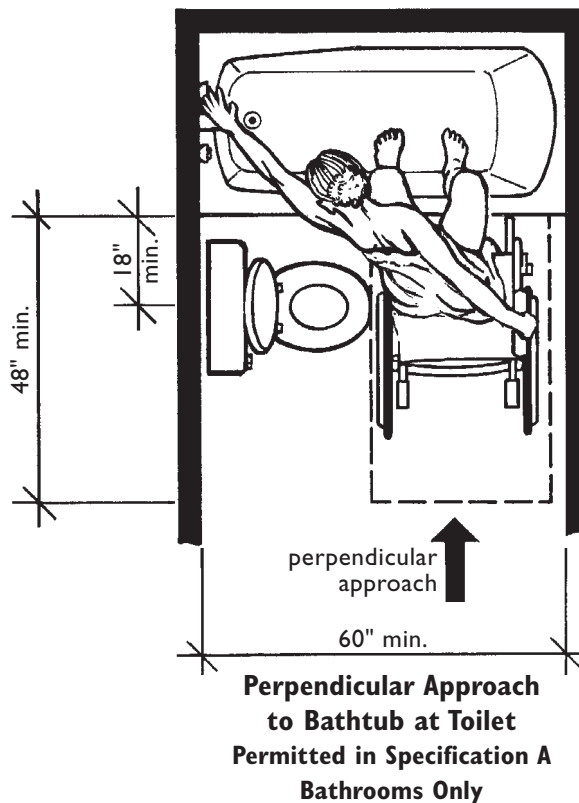
In **Specification A bathrooms**, the Guidelines also allow a toilet to occupy the space next to the bathtub. The approach by a person using a wheelchair is perpendicular to the bathtub. This arrangement of fixtures also makes it difficult to reach the controls, but reach can be improved if users can remove their footrests and position their feet in the tub to get closer to the tub rim.

A second option for some users is to transfer onto the toilet to reach the controls. The user then must transfer back into his or her wheelchair and maneuver to get sufficiently close to the bathtub rim to make a transfer down into the bathtub. Other users may add a bathtub seat that allows them to remain at the height of the tub rim while bathing. Transfers back into a wheelchair may be easier from a tub seat rather than from the floor of the bathtub, but this option does not allow the user to be immersed in water for a soaking bath.

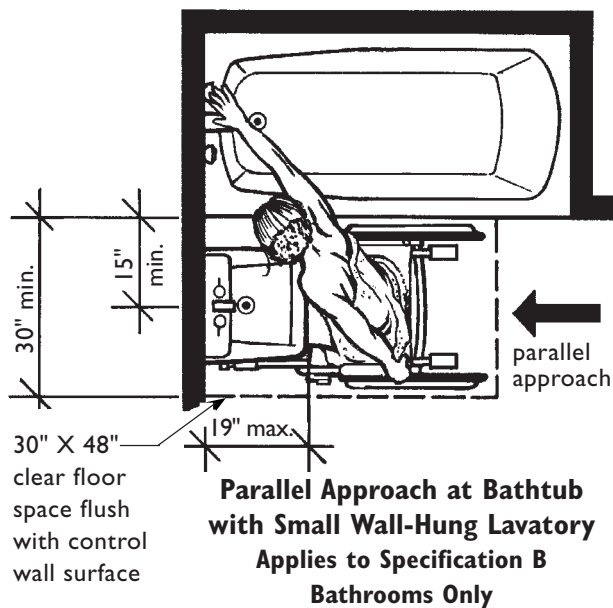
In **Specification B bathrooms**, a 30-inch x 48-inch clear floor space is required adjacent to the bathtub to provide greater access for transferring into and out of the bathtub. The controls must be on the wall at the foot of the bathtub, as shown in the Guidelines' Requirement 7, Figure 8. The edge of the clear floor space should be flush with the control wall surface.

Neither a vanity cabinet nor a toilet may encroach on this clear floor space. However, a wall-hung lavatory with a depth of 17 to 19 inches and with knee space below is the only fixture that may overlap the clear floor space at bathtubs in Specification B bathrooms. A lavatory that is deeper than 19 inches only may be installed if it is recessed into the wall to allow the edge of the 30-inch x 48-inch clear floor space to begin flush with the control wall surface at the foot of the bathtub.

Toilets typically protrude into the room farther than vanity cabinets, making it necessary for a person using a wheelchair to perform, what may be for some people, a difficult stretch to operate tub controls.



The only permissible overlapping element is a 17" to 19" wall-hung lavatory with knee space below.

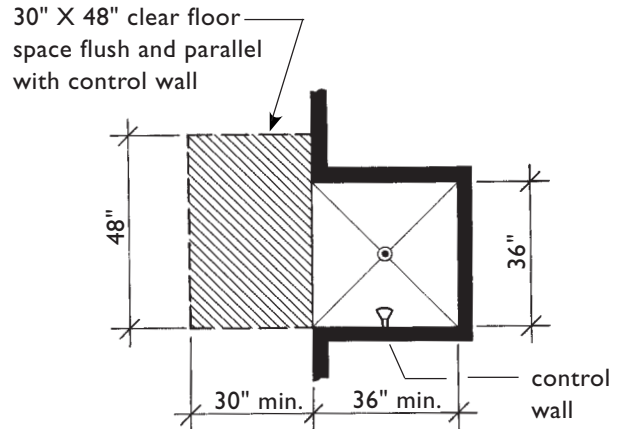


## CLEAR FLOOR SPACE AT SHOWERS

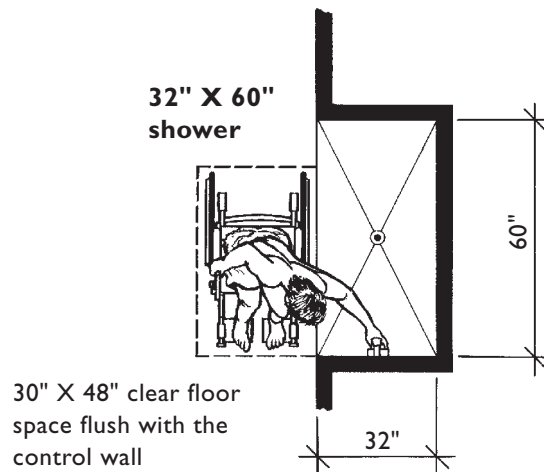
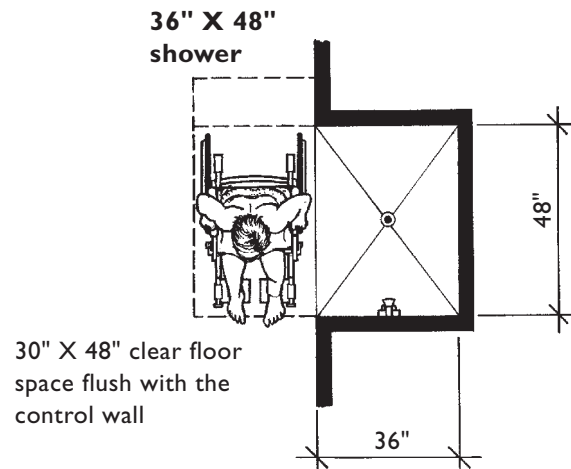
Shower stalls in covered dwelling units may be of any size or configuration and are not limited to the 36-inch x 36-inch stall shown in the diagram on the right, taken from the Guidelines, that illustrates clear floor space requirements for showers. An exception regarding minimum stall size is made when a shower stall is the only bathing fixture in the covered dwelling unit; this is discussed on page 7.58.

A 30-inch x 48-inch clear floor space must be provided at shower stalls, parallel to the fixture and flush with the control wall. In 36-inch x 36-inch showers, the clear floor space must be positioned exactly as shown in the upper right diagram, with 12 inches offset behind the wall opposite the control wall. The Guidelines require this clear floor space beside the shower fixture primarily to ensure that adequate maneuvering space is available outside the stall for a person using a mobility aid to get sufficiently close to enter and exit the stall safely. The 36-inch x 48-inch shower in the center is generally not intended for use with a wall hung bench seat because a user seated on the bench could not reach the controls. However, because some users may elect to add their own seat, an additional 12 inches of clear floor space is, as well as reinforcing for such a seat, recommended (see 6.13).

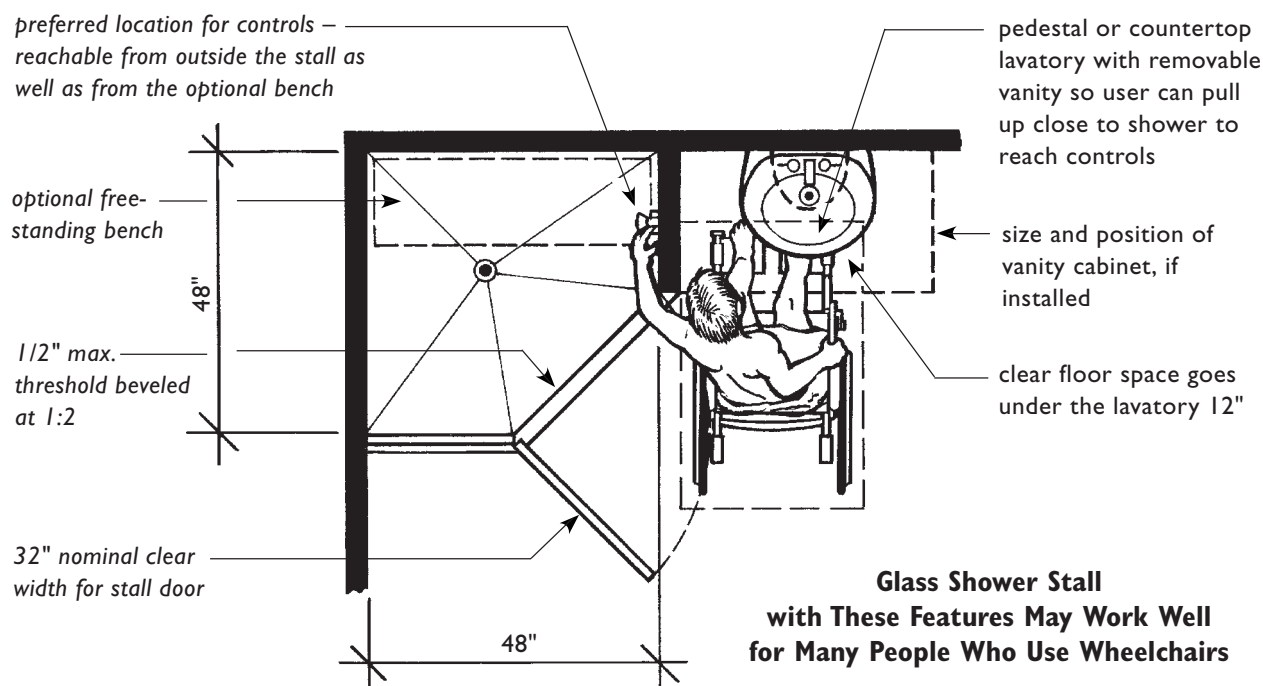
In Specification A bathrooms, where all fixtures must meet the Guidelines, if the room is equipped with both a bathtub and a separate shower, both fixtures must be provided with the required clear floor space. In Specification B bathrooms, only one bathing fixture must be provided with the required clear floor space. All shower stalls must have reinforced walls for later installation of grab bars (see Chapter 6). The Guidelines contain no specifications that limit the curb height, nor do they address control type or location.



**Guideline Requirements for Clear Floor Space at Showers**



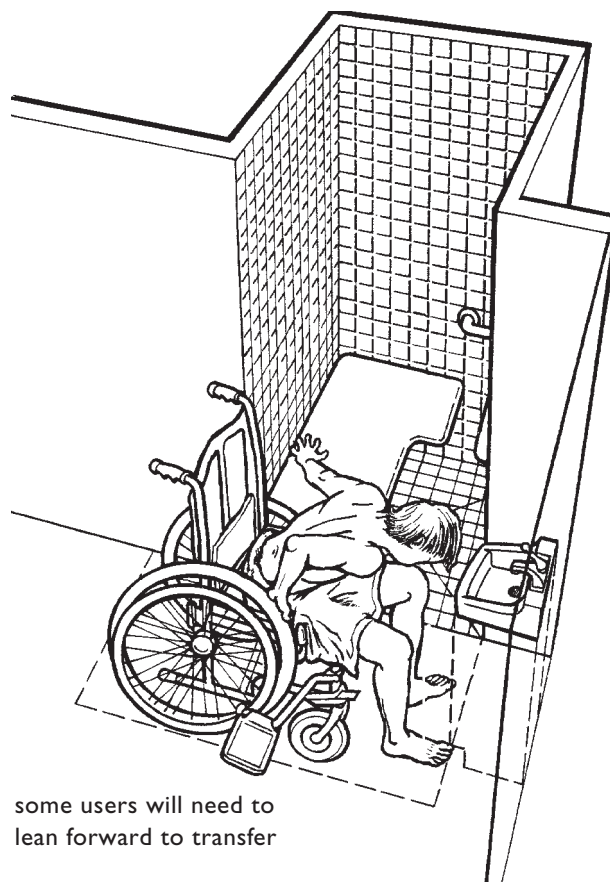
**Other Shower Sizes Meet the Requirements of the Guidelines**



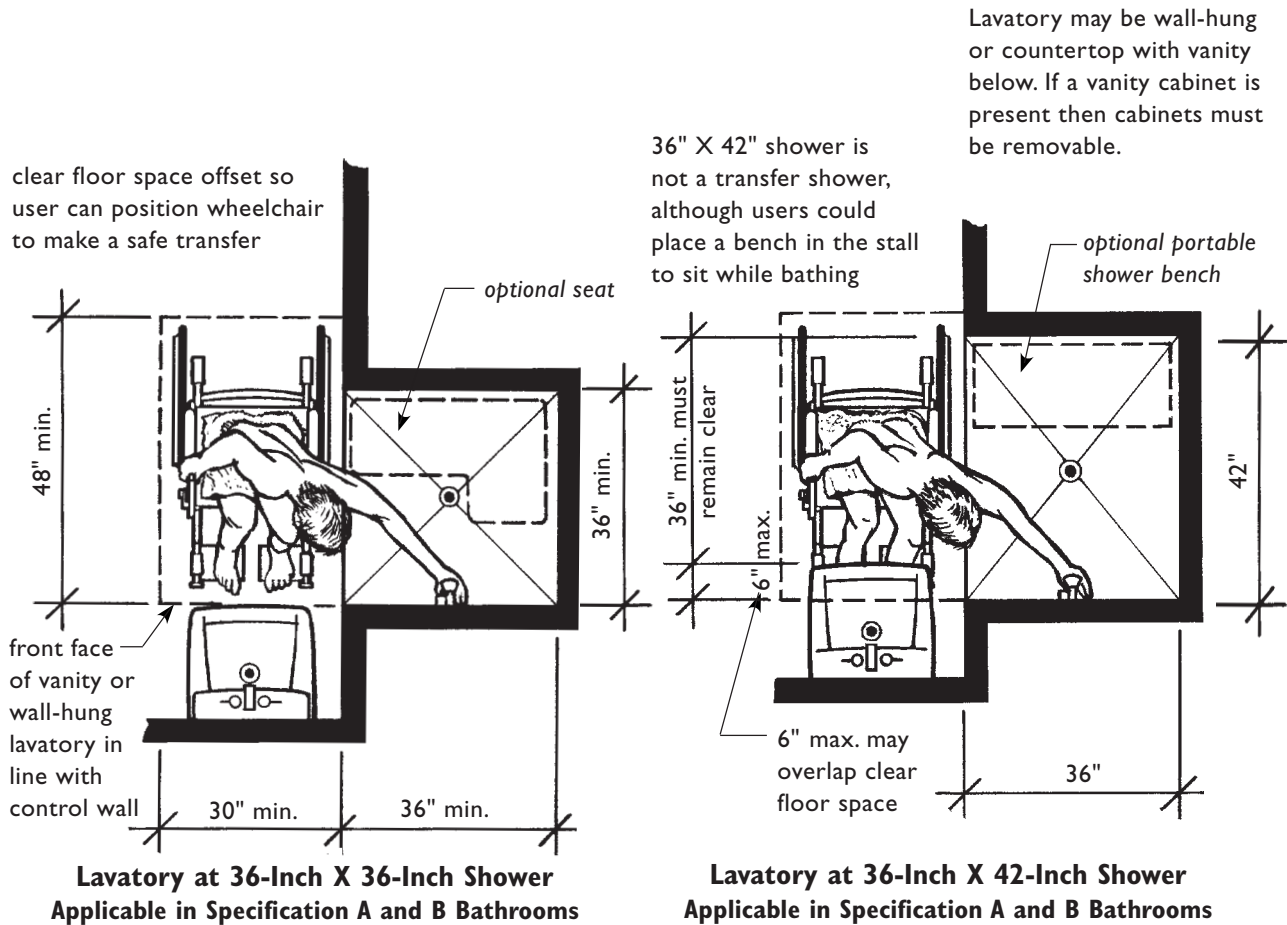
## Fixtures that May Overlap

### Clear Floor Space at Showers

In both Specification A and B bathrooms, **no other fixture may overlap the clear floor space at showers** when the shower is only 36 inches long. However, if the shower is 42 inches long and a lavatory is mounted on the control wall beside the shower, it may overlap the clear floor space by six inches. The portion of the lavatory that overlaps the clear floor space must have knee space below or a removable vanity cabinet. Thirty-six inches of the stall entrance must always remain clear for maneuvering and transfers. These limitations ensure that if a wall-mounted transfer seat or a free-standing shower bench or stool is placed in the shower, sufficient space to make a transfer is available.



**Lavatory Must Not Encroach on Clear Floor Space at 36-Inch X 36-Inch Shower**



### Shower as Only Bathing Fixture

In both Specification A and B bathrooms, when a stall shower is the only bathing fixture in the covered dwelling unit it must be at least 36 inches x 36 inches in size. This also applies to any planned bathrooms on the primary entry level of covered multistory dwelling units in buildings with one or more elevators. Shower stalls of larger sizes and configurations are permitted, even when the shower stall is the only bathing fixture in the covered unit.

While reinforced walls for later installation of grab bars are required in all bathrooms, Specification A bathrooms do not require reinforcing to

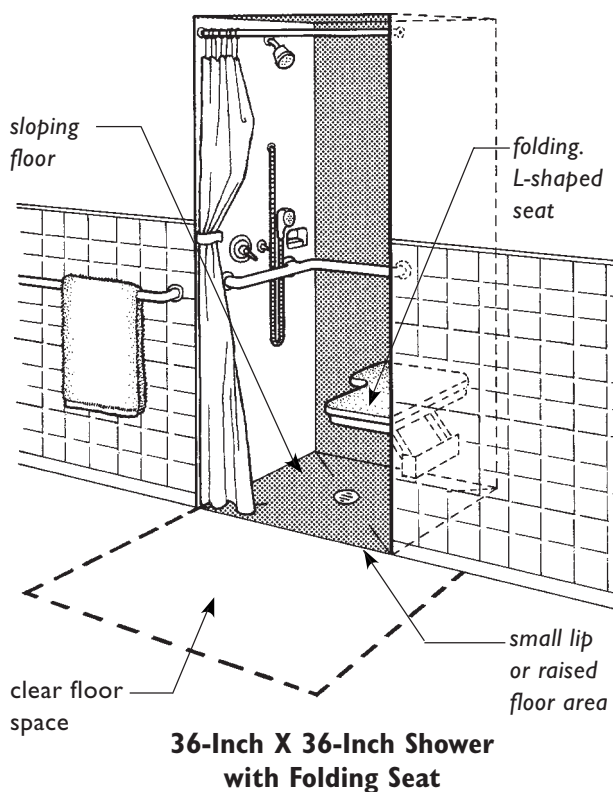
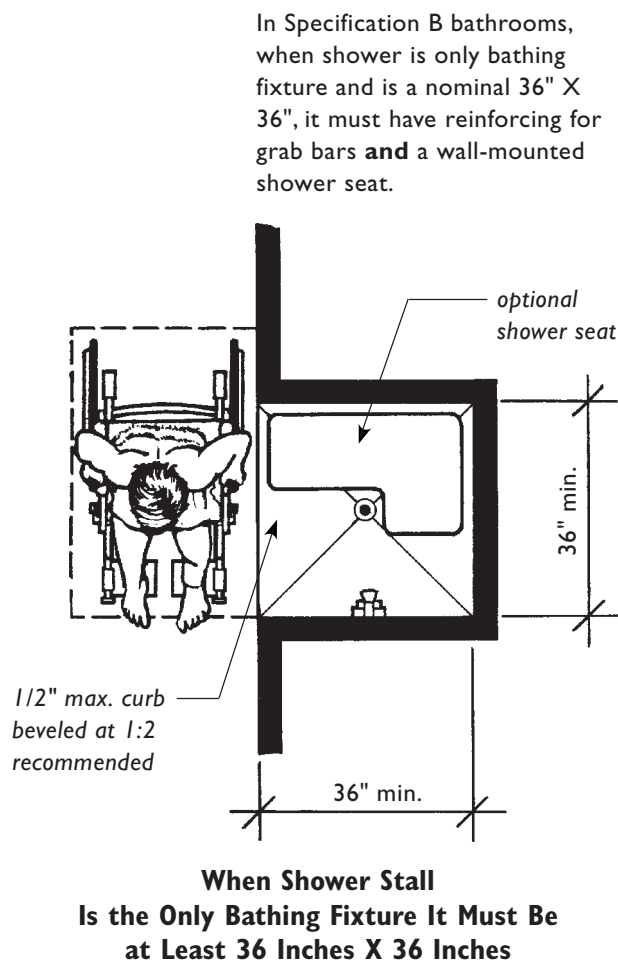
support a wall-mounted shower seat in the shower stall. However, it is strongly recommended that appropriate reinforcing for shower seats be installed in Specification A bathrooms. See Chapter 6: "Reinforced Walls for Grab Bars."

In Specification B bathrooms, however, in addition to the reinforcing required for grab bars, the shower stall must have reinforcing to allow for later installation of an optional wall-mounted seat in a shower stall measuring a nominal 36 inches square. By adding this requirement the Guidelines are setting the framework for a shower that could evolve into the ANSI accessible 36-inch x 36-inch transfer shower.

The 36-inch x 36-inch transfer shower with a low curb and L-shaped seat is a versatile and successful bathing fixture for people who use wheelchairs or have difficulty walking. If a seat is installed that can be folded up against the wall, an ambulatory user also can stand in the shower. The illustration below on the right shows the primary features found in a transfer shower. The 30-inch x 48-inch clear floor space beside the shower provides access to the control wall, and because it extends beyond the back of the stall, it allows a person using a wheel-

chair to position his or her chair in line with the wall-hung seat to make a safe sliding transfer.

Reinforcing for a shower seat is not required in stalls of larger sizes, e.g., 30 inches x 60 inches because the stall is so long that the user is not able to reach the controls from a seat at the opposite end of the stall. However, it is recommended that reinforcing be installed in stalls of different configurations and that thought be given to placing controls within reach of this potential seat as well as from outside the stall.



## RECOMMENDATIONS FOR INCREASED ACCESSIBILITY

*While the builder or developer of multifamily housing is not required to address all the design concerns faced by people with disabilities who may live in a development, there are certain aspects of bathroom design which should be considered when selecting fixtures.*

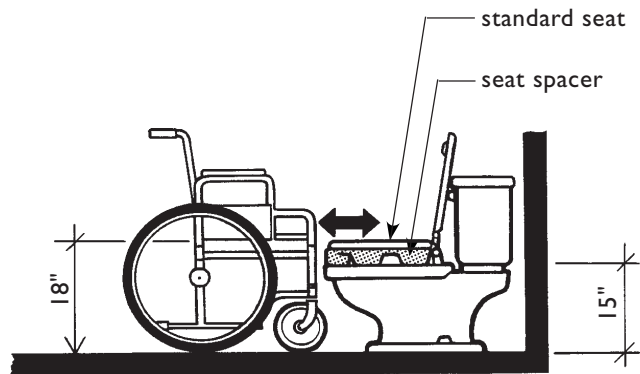
### Toilet Seat Height

*There is no single seat height which would suit all users. Low toilet seats are difficult for people who have trouble getting up on their feet and for people who use wheelchairs who may be able to transfer onto the seat but not get back into their chairs without assistance. High seats may be difficult for some wheelchair users to get onto and for shorter people because their feet do not touch the floor, making it difficult to maintain balance.*

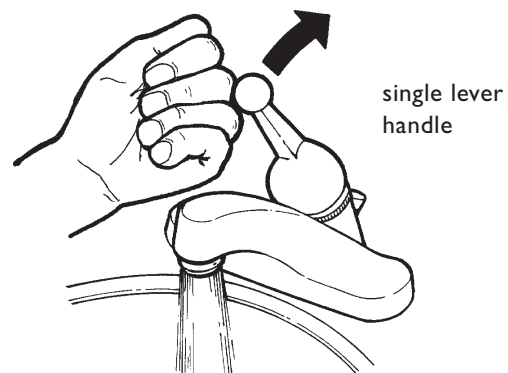
*ANSI 4.32.4.2 specifies that toilet seats in dwelling units “shall be at least 15 inches and no more than 19 inches measured to the top of the toilet seat.” Standard toilets with 15-inch high seats are widely available in the marketplace and offer the best flexibility for adaptation for a wider range of people. For a user who may require that the seat be higher, it is relatively simple to install a seat spacer or thick seat. By contrast, to lower a toilet usually requires replacing the entire toilet fixture. It is recommended that standard low 15-inch toilets be installed in all dwelling units covered by the Guidelines.*

### Handles, Faucets, and Controls

*Many people have difficulty using faucets and controls that require grasping and twisting of symmetrical shapes such as round, cylindrical, or square handles. It is preferable to install lever or blade handles which*



**Elevated Seats at Conventional Toilets**



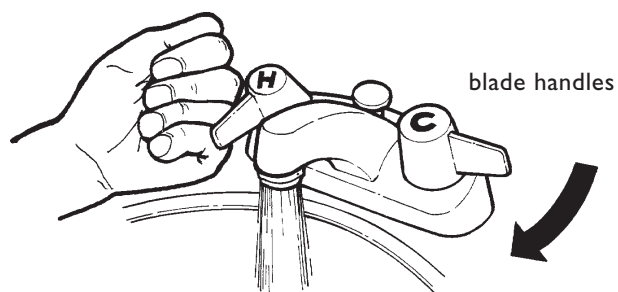
**Ideal Faucet Control**

can be used without gripping or twisting. If a faucet can be operated with a closed fist and requires less than five pounds of force to operate, then it is a usable control for most people with disabilities.

Control location also can greatly improve ease and safe use of the fixture. When bathtub controls are offset toward the outside of the bathing fixture, the need to bend and stretch to reach the controls from outside the fixture is greatly reduced - a help for any user with limited flexibility.

### Auxiliary Handles at Doors

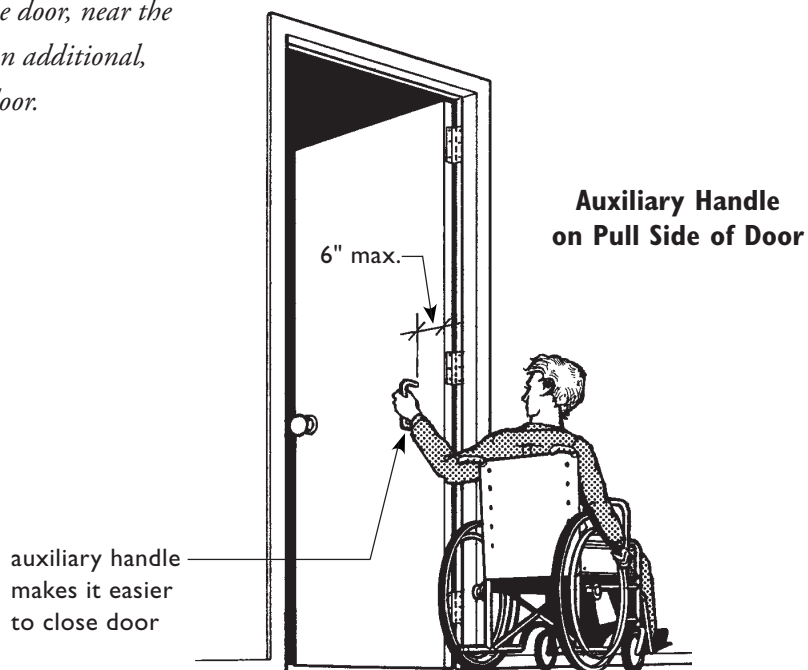
Suggestions to increase the accessibility and usability of bathrooms are made in the following section, "Example Bathroom Floor Plans that Comply with the Guidelines." One enhancement frequently highlighted is the installation of auxiliary handles on bathroom doors. Not required by the Guidelines, this additional hardware works well for many people with mobility impairments who have difficulty closing doors. With the installation of a second handle (such as a 4-inch loop handle similar to those used on drawers and kitchen cabinets) on the pull side of the door, near the hinge edge, the user is provided with an additional, and often easier, method of closing a door.



**Another Usable Faucet Control**



**Preferred Offset Control Location**



## EXAMPLES OF BATHROOM FLOOR PLANS THAT COMPLY WITH THE GUIDELINES

The plans presented on the following pages are examples of “usable” bathrooms and powder rooms that comply with either Specification A or Specification B or both. These plans are only a sampling of possible layouts that would conform to the specifications and are not intended to limit designers’ options; certainly other layouts are feasible. The plans are neither required nor even suggested as ideal examples. They are included to illustrate typical applications or interpretations of specific requirements of the Guidelines under various circumstances.

The plans may be used as resource material and planning guides when developing new multi-family housing designs. Conventional industry standard fixture sizes have been used consistently when developing these plans.

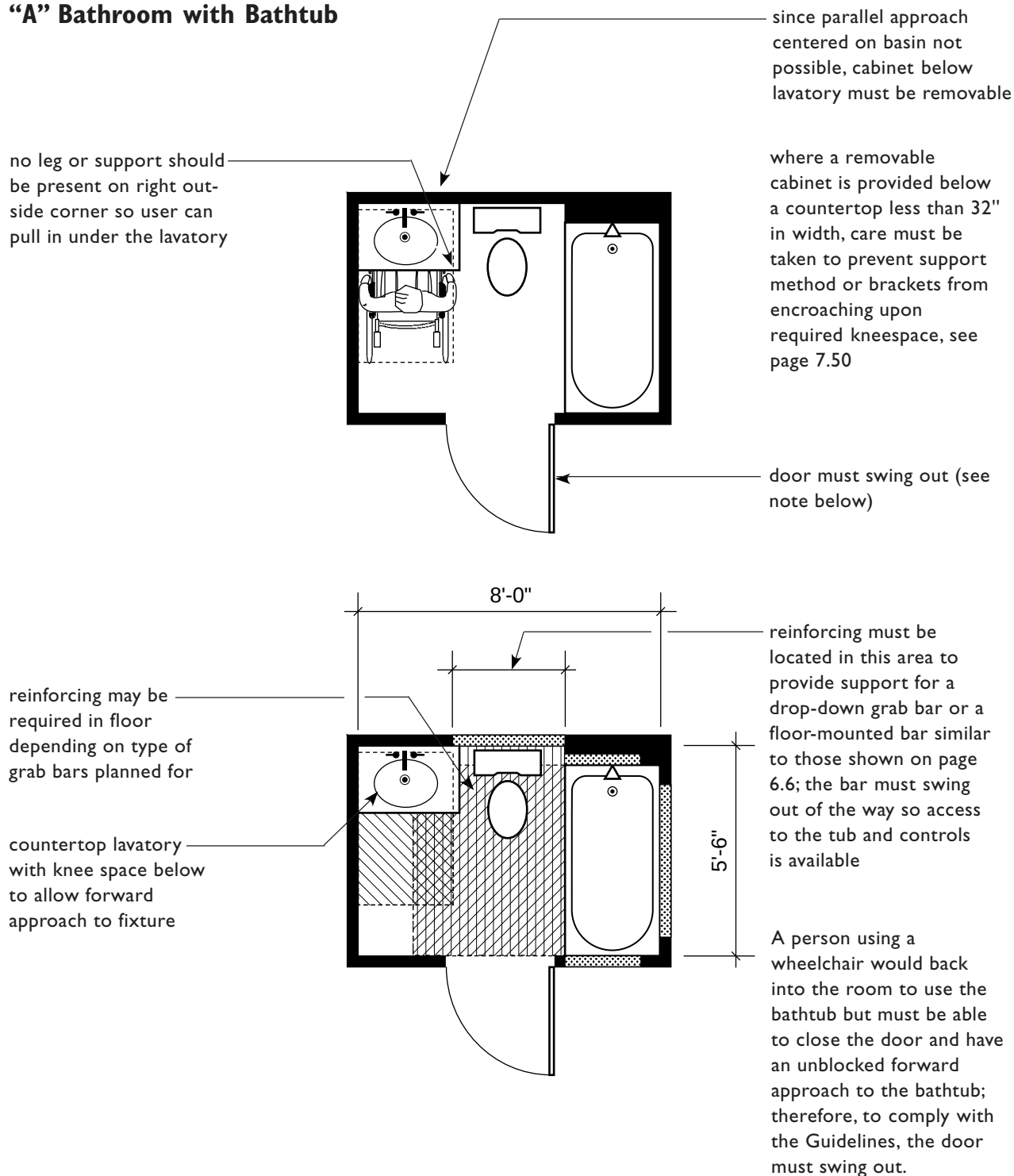
The toilets used measure 29 inches from the back wall to the front edge of the bowl. As toilets vary in size, with some being as long as 30 inches, it is important to allow sufficient space for doors to clear the toilet bowl. Wall-hung lavatories are 19 inches deep and countertop lavatories with base cabinets below are 21 inches deep unless noted otherwise on the plans. Doors

are 34 inches wide to provide the required nominal 32-inch clear opening. Rooms may need to be enlarged if a 36-inch door is installed. Bathtubs in the small bathrooms are 60 inches long and, along with showers, vary as the rooms become less conventional.

It is important to allow sufficient space for any fixtures that may be larger than those shown here. Although designers should rely upon the dimensions indicated and not scale off the drawings, all plans in this section are reproduced at 1/4-inch scale.

Some of the plans are more usable than others by people with disabilities and comments are included to describe where improvements could be made. The plans are divided according to bathing fixture type: bathtub/showers, showers, and multiple bathing fixtures. The plans are presented in pairs, with the first showing the overall room shape while the dimensioned plan describes the clear floor spaces at fixtures and indicates minimum wall and/or floor areas to be reinforced.

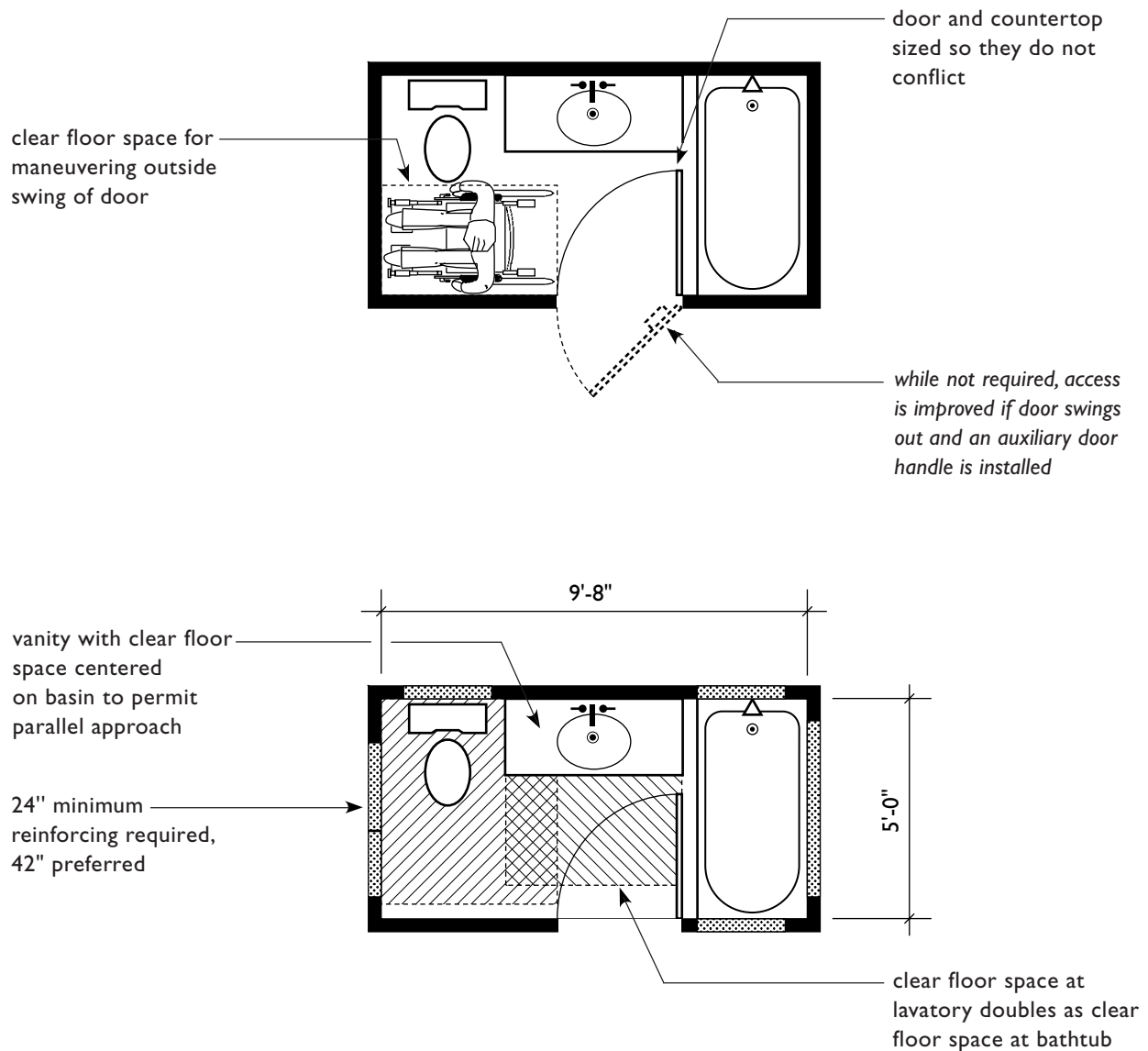
Text and notes presented in *italic* type are comments or recommendations and are not required by the Guidelines.

**BATHROOMS WITH BATHTUB BATHING FIXTURE****“A” Bathroom with Bathtub**

**Legend:**

- reinforcing in walls or floors for grab bars
- min. clear floor space at each fixture
- min. clear floor space outside swing of door

## “A” Bathroom with Bathtub

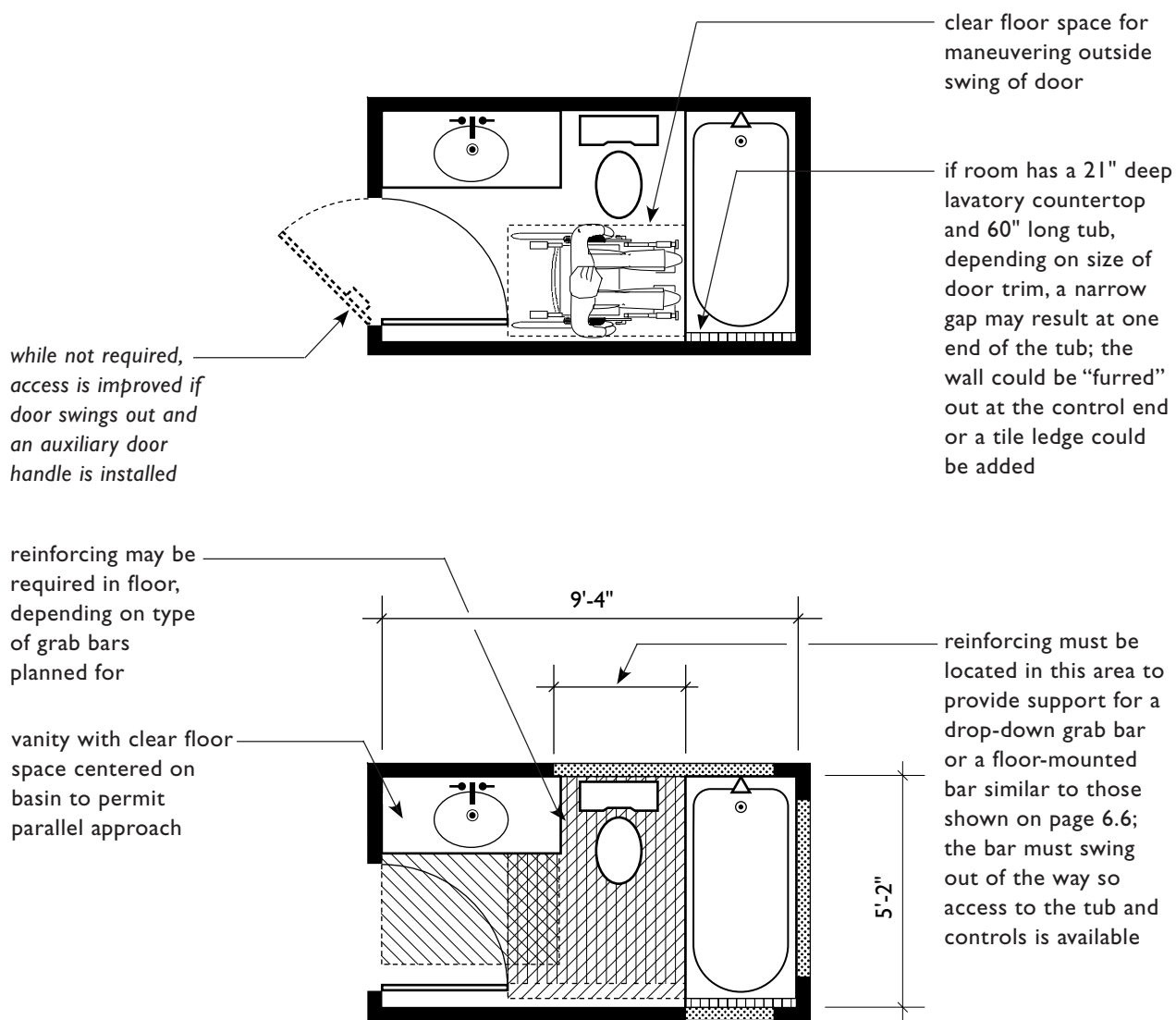


|                |                                              |                                        |                                              |
|----------------|----------------------------------------------|----------------------------------------|----------------------------------------------|
| <b>Legend:</b> | reinforcing in walls or floors for grab bars | min. clear floor space at each fixture | min. clear floor space outside swing of door |
|----------------|----------------------------------------------|----------------------------------------|----------------------------------------------|

## “A” Bathroom with Bathtub

The Guidelines do not require space for a five-foot turn or a T-turn in bathrooms; see page 7.39. In this bathroom, most persons using a wheelchair will not be able to turn around and may have to back into or out of the room. This, combined with

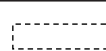
the lack of space to the latch side of the door, makes this room difficult to use by many people. Therefore, it is recommended that the 5'-2" dimension be increased and/or that knee space be provided under the lavatory.


**Legend:**


reinforcing in walls or floors for grab bars

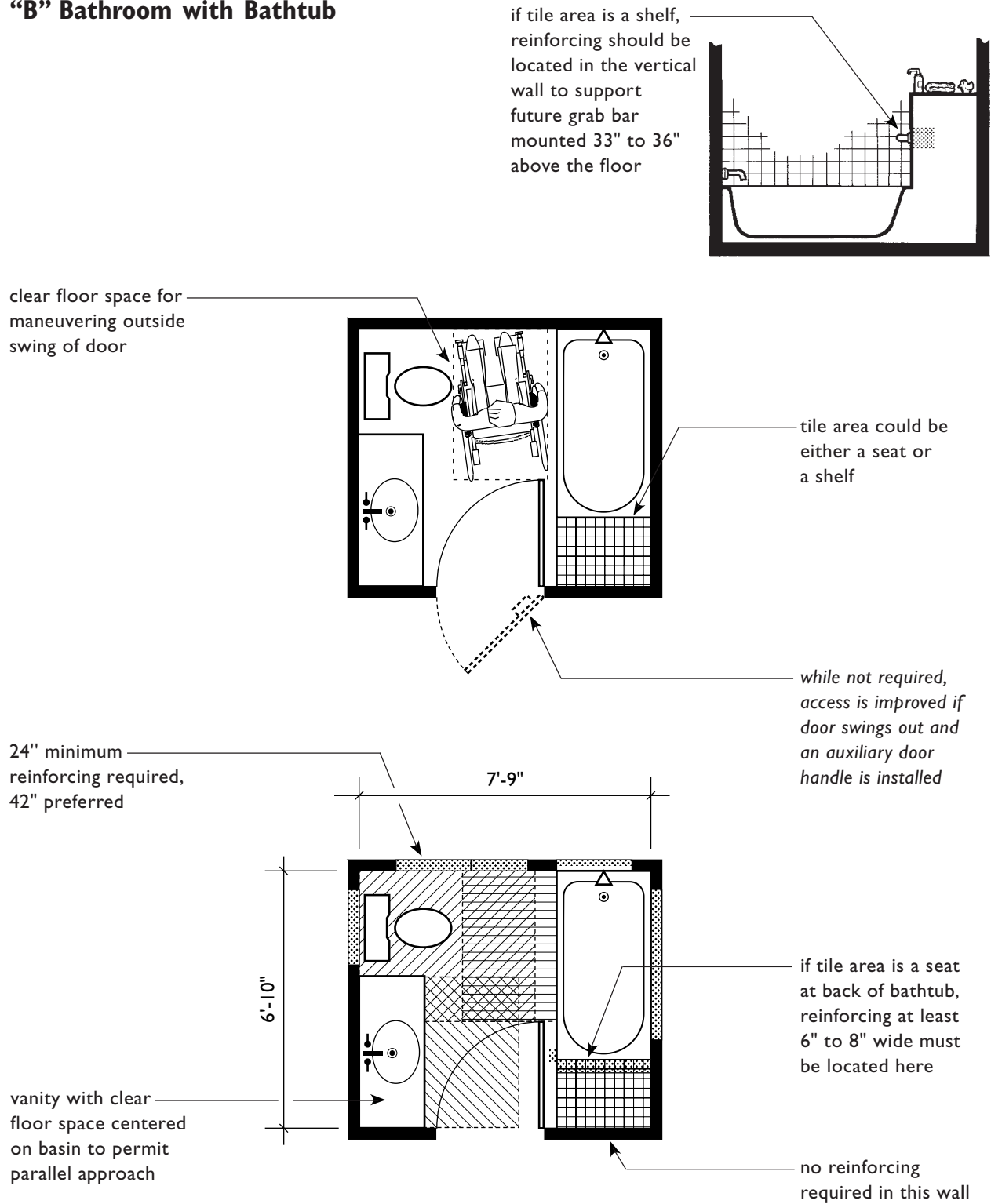


min. clear floor space at each fixture



min. clear floor space outside swing of door

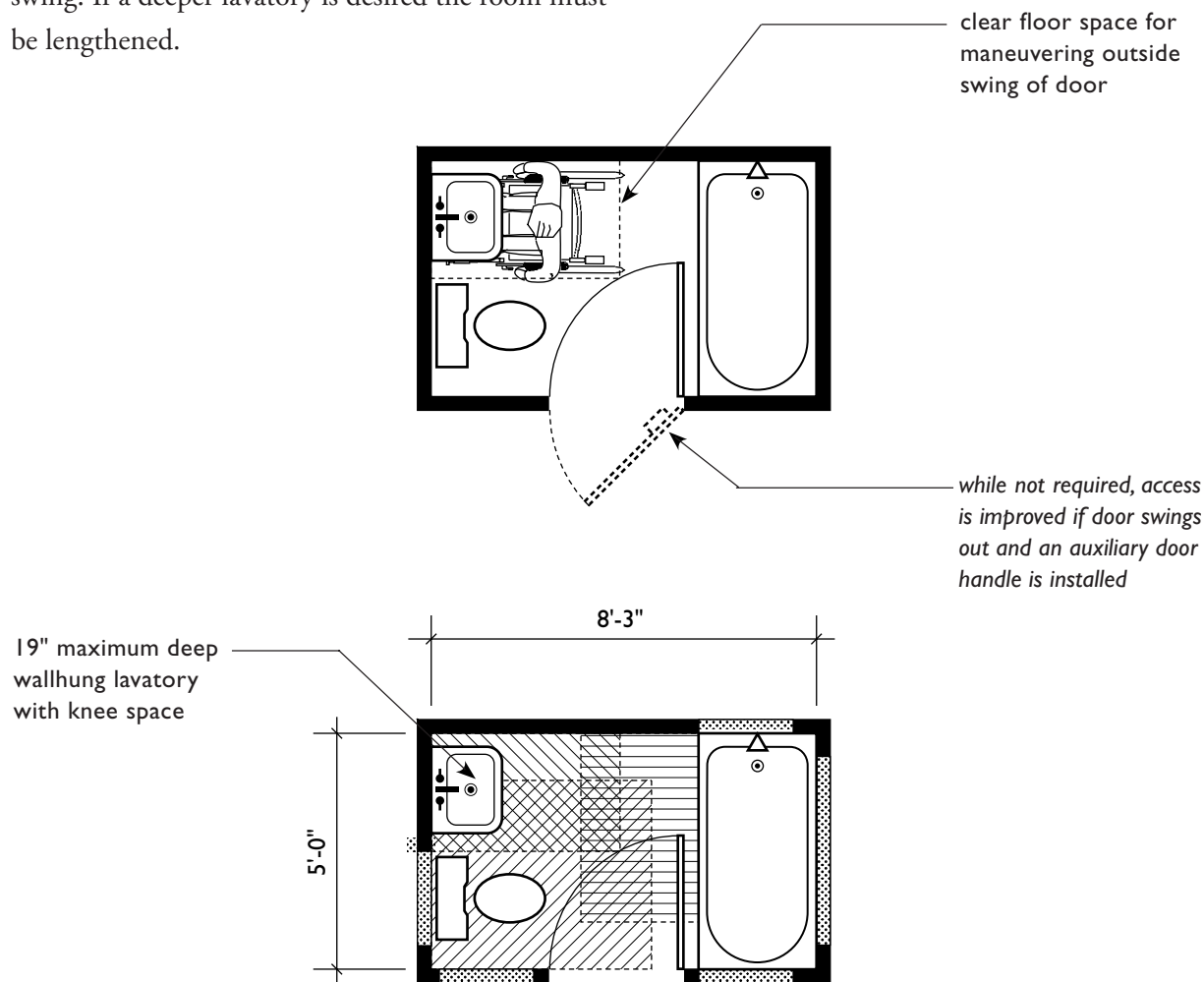
## "B" Bathroom with Bathtub



**Legend:** reinforcing in walls or floors for grab bars min. clear floor space at each fixture min. clear floor space outside swing of door

## “B” Bathroom with Bathtub

Only 19 inches of the required 30-inch x 48-inch clear floor space can go under a lavatory. A deeper lavatory would require that the clear floor space be positioned away from the plumbing wall and closer to the tub, causing it to overlap with the door swing. If a deeper lavatory is desired the room must be lengthened.


**Legend:**


reinforcing in walls or floors for grab bars



min. clear floor space at each fixture



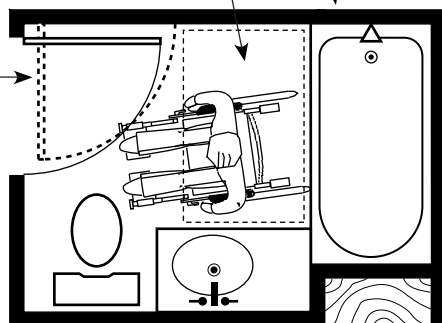
min. clear floor space outside swing of door

## “B” Bathroom with Bathtub

because lavatory has  
no knee space below,  
to meet the Guidelines  
bathtub controls must  
be located on this wall

clear floor space  
for maneuvering  
outside swing  
of door

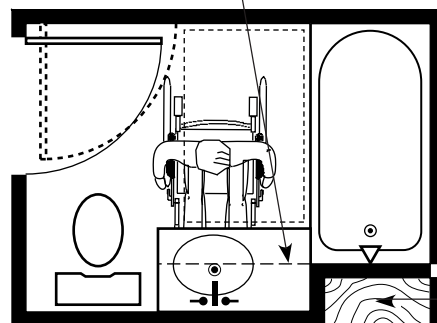
alternate  
door  
location



**Option 1:**  
**Plumbing on Opposite Walls**  
Lavatory With Base Cabinet Below  
(No Knee Space)

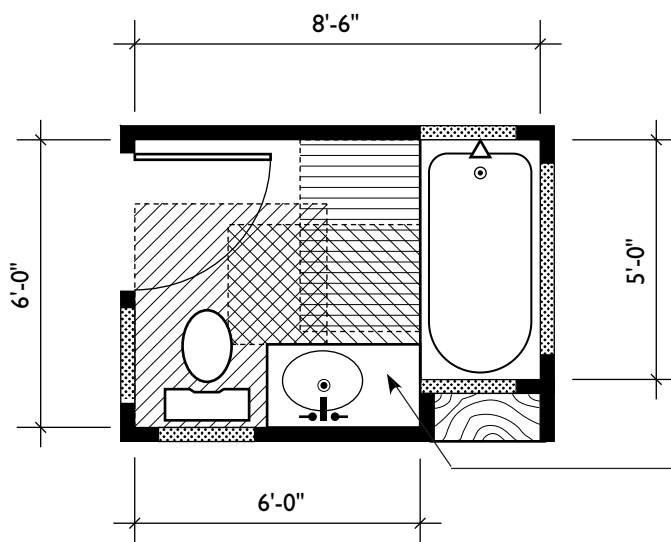
end of knee space  
flush with bathtub  
control wall permits  
access to controls;  
because knee space  
is not the full depth,  
user must still be able  
to execute a parallel  
approach to lavatory

if lavatory has  
knee space below,  
bathtub controls  
can be located  
on a common  
plumbing wall



**Option 2:**  
**Plumbing on Common Wall**  
Lavatory With Shallow Knee Space

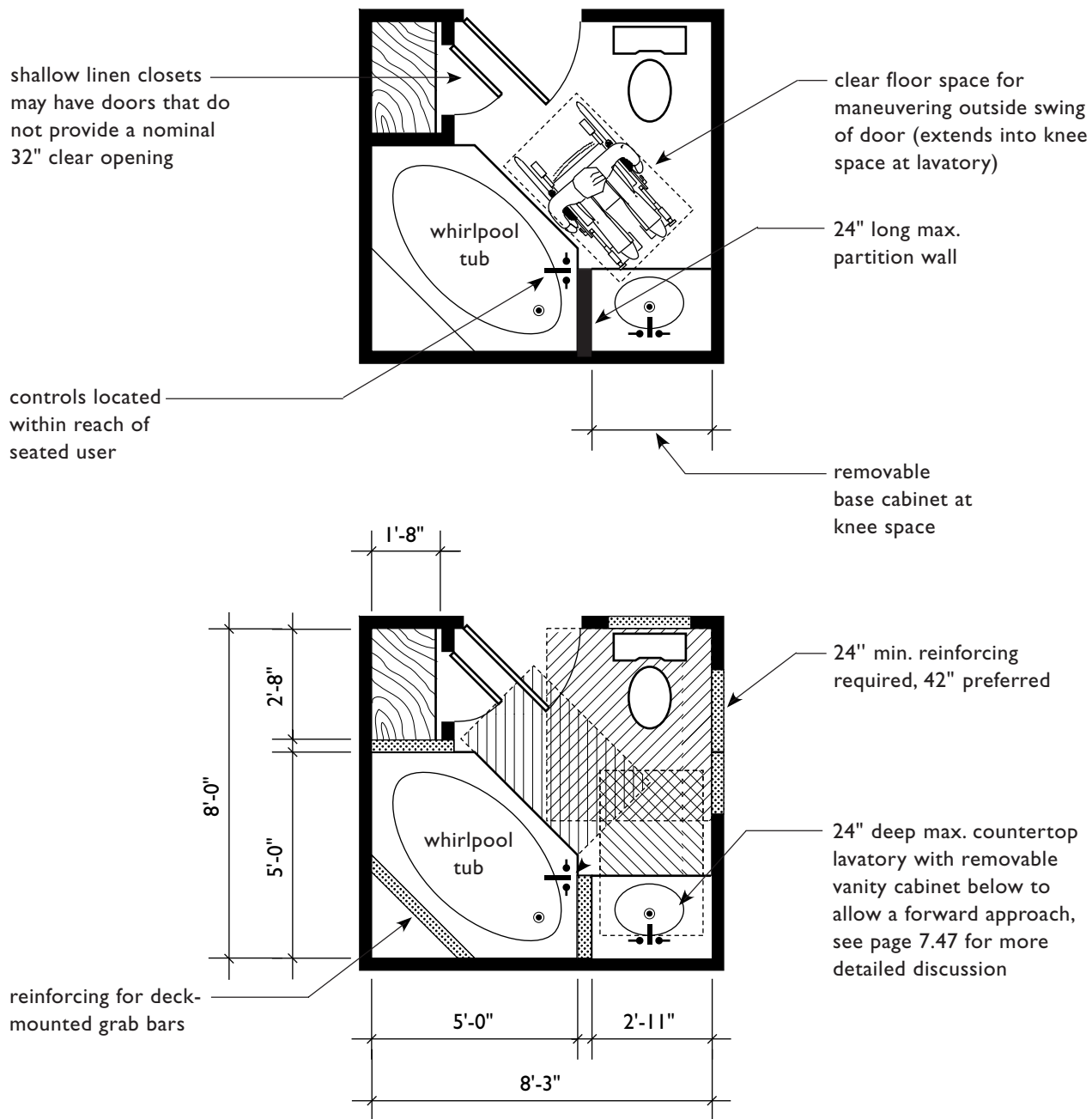
storage  
shelves



36" wide vanity  
with offset basin  
to permit parallel  
approach centered  
on basin

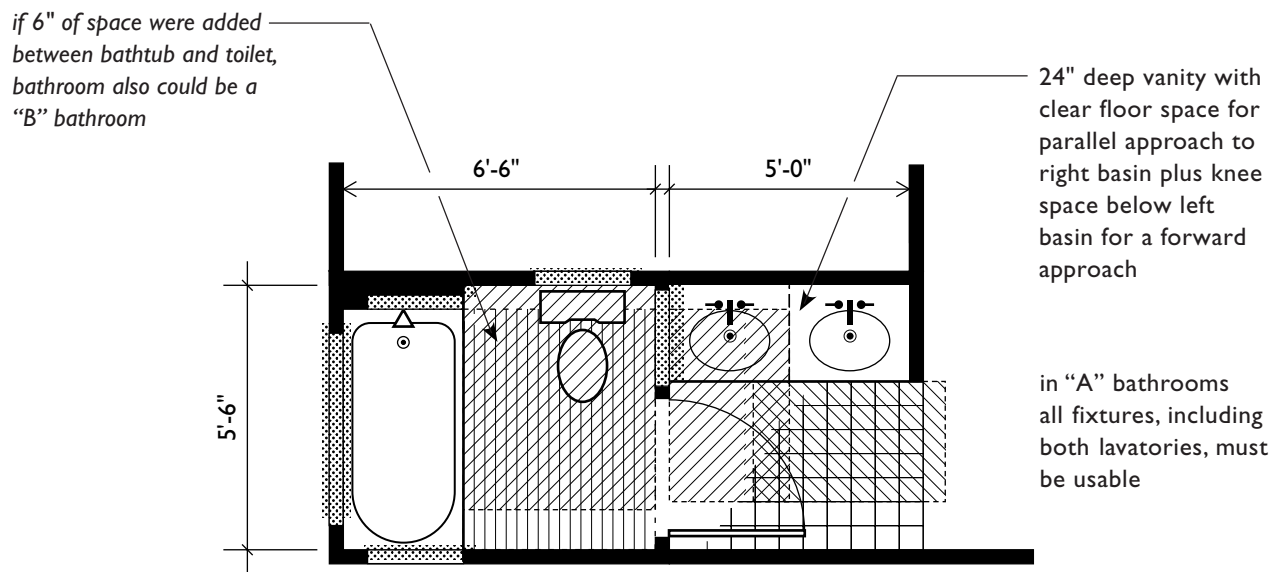
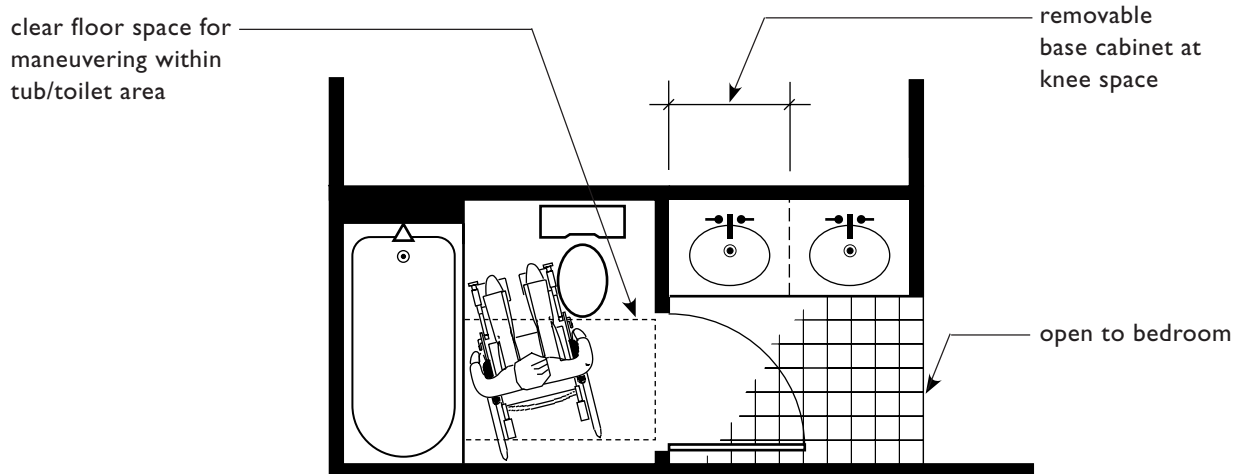
**Legend:** reinforcing in walls or floors for grab bars min. clear floor space at each fixture min. clear floor space outside swing of door

## “B” Bathroom with Bathtub



**Legend:** reinforcing in walls or floors for grab bars min. clear floor space at each fixture min. clear floor space outside swing of door

## Compartmentalized “A” Bathroom with Bathtub



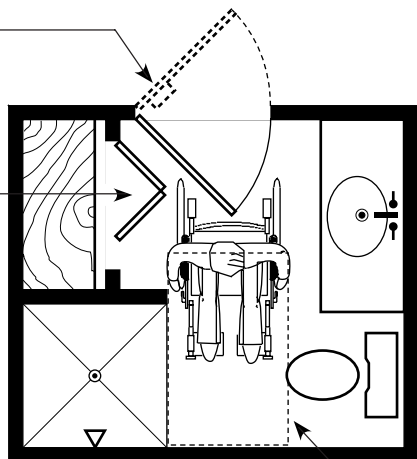
|                |                                              |                                        |                                              |
|----------------|----------------------------------------------|----------------------------------------|----------------------------------------------|
| <b>Legend:</b> | reinforcing in walls or floors for grab bars | min. clear floor space at each fixture | min. clear floor space outside swing of door |
|----------------|----------------------------------------------|----------------------------------------|----------------------------------------------|

# BATHROOMS WITH SHOWER BATHING FIXTURE

## “A” and “B” Bathroom with Shower

while not required, access is improved if door swings out and an auxiliary door handle is installed

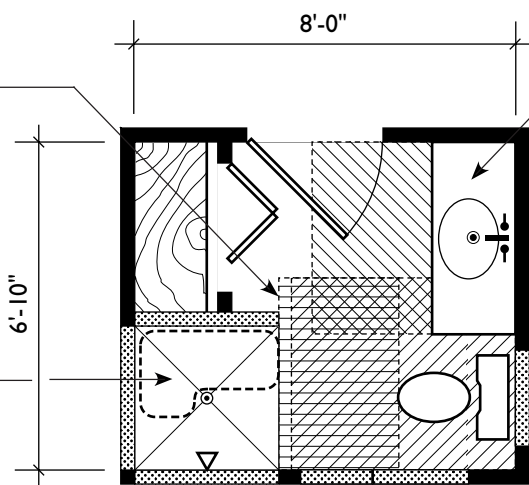
linen closets may have doors that do not provide a nominal 32" clear width if they do not require the user to pass through the door to reach the contents



clear floor space for maneuvering outside swing of door

36" x 36" min. shower with clear floor space offset to provide access to optional seat

optional shower seat



vanity with clear floor space centered on basin to permit parallel approach

24" min. reinforcing required, 42" preferred

transferring onto toilet may be difficult for some people, recommend increasing this dimension 6"

### Legend:



reinforcing in walls or floors for grab bars



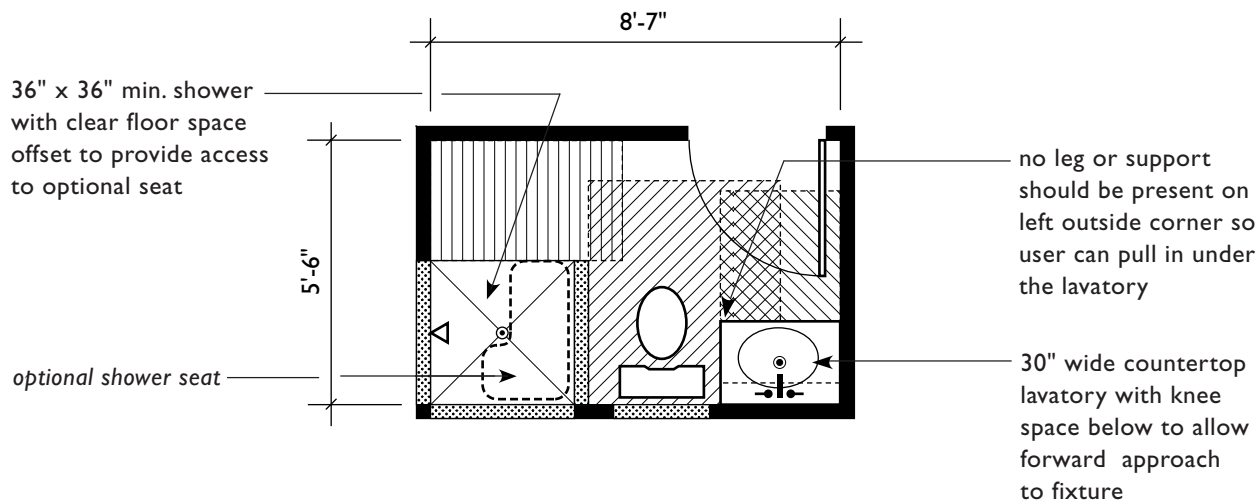
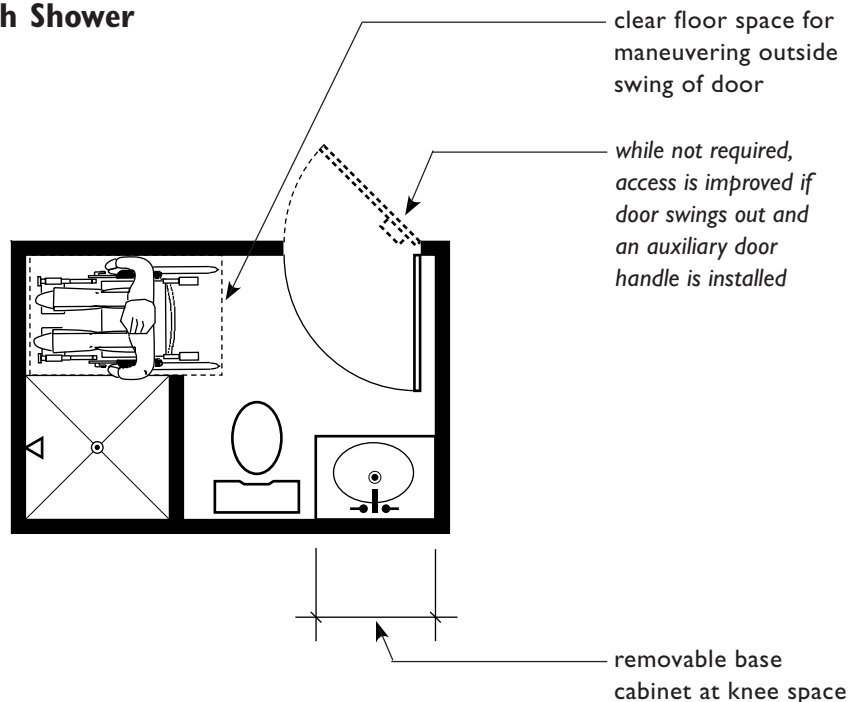
min. clear floor space at each fixture



min. clear floor space outside swing of door

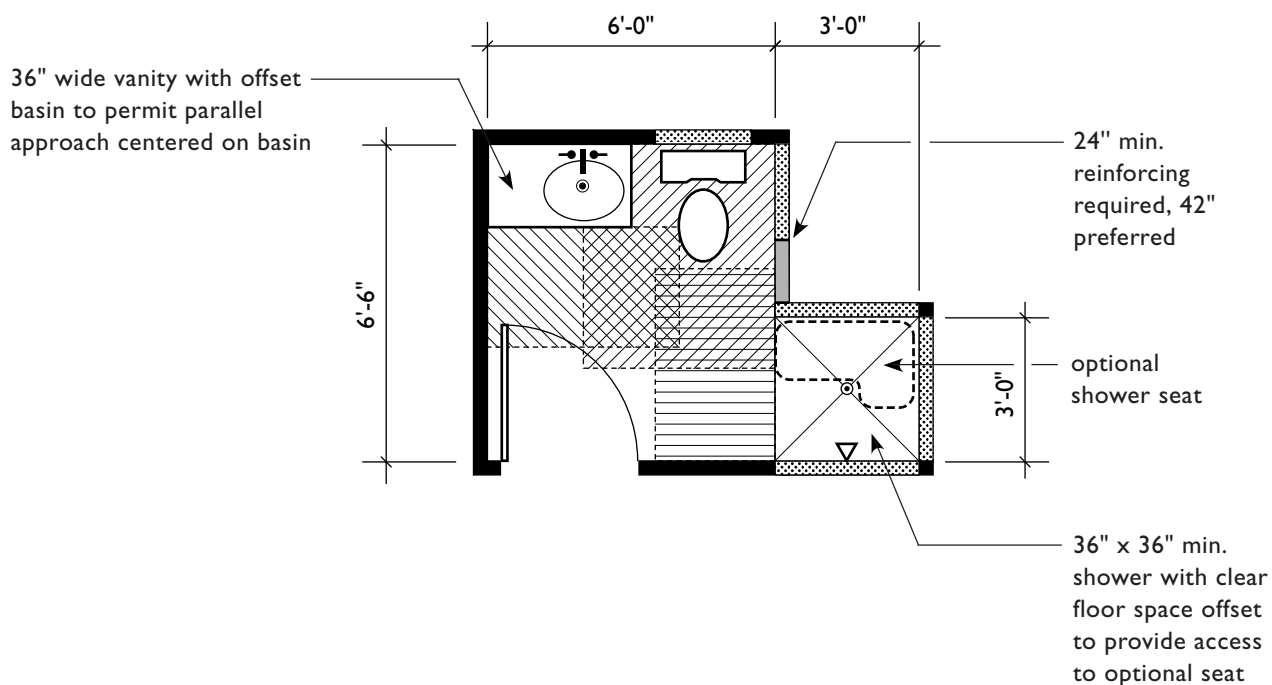
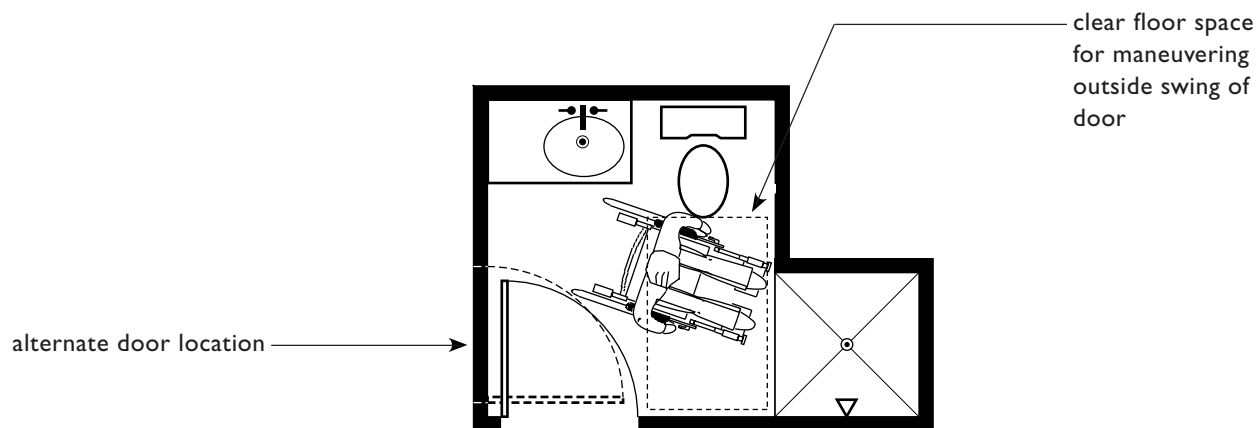
## “A” and “B” Bathroom with Shower

where a removable cabinet is provided below a countertop less than 32" in width, care must be taken to prevent support method or brackets from encroaching upon required knee space, see page 7.50



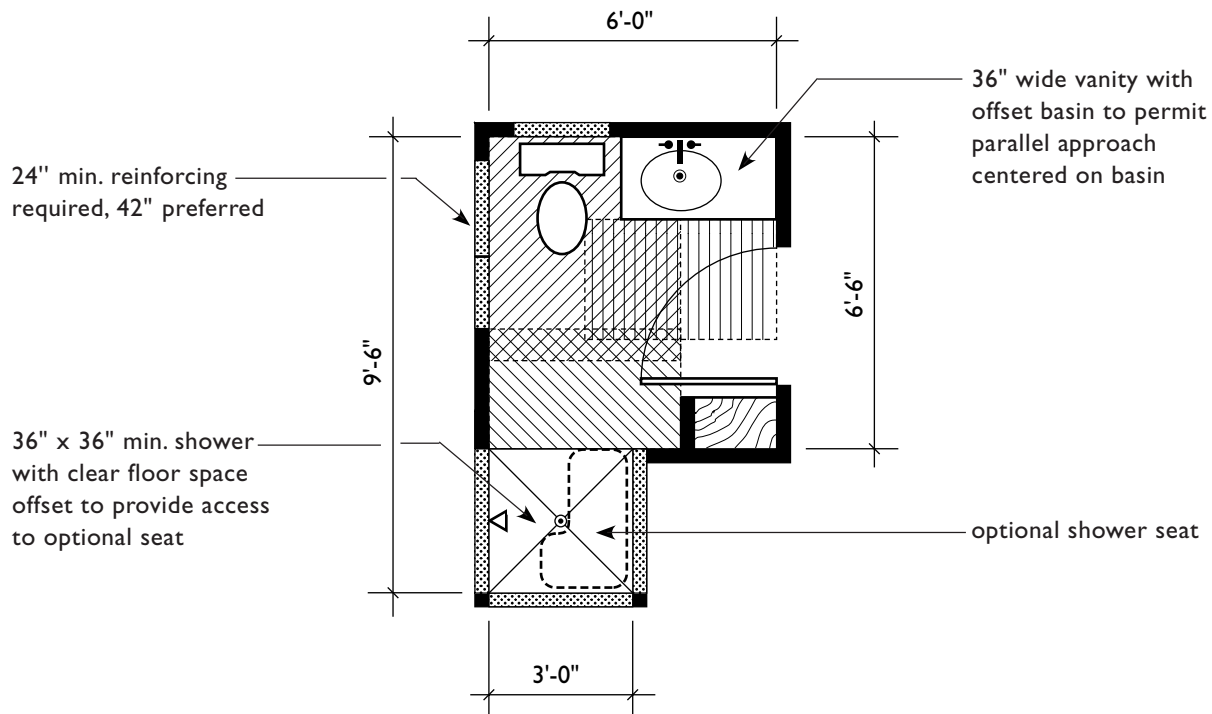
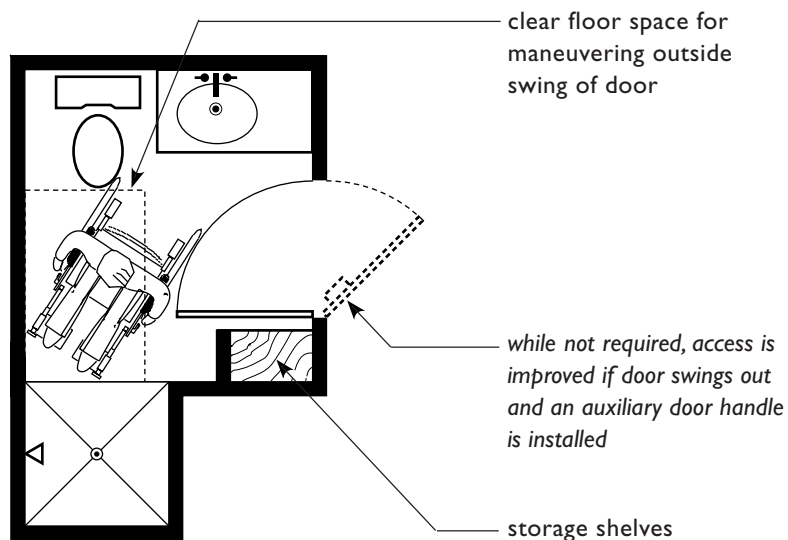
|                |                                              |                                        |                                              |
|----------------|----------------------------------------------|----------------------------------------|----------------------------------------------|
| <b>Legend:</b> | reinforcing in walls or floors for grab bars | min. clear floor space at each fixture | min. clear floor space outside swing of door |
|----------------|----------------------------------------------|----------------------------------------|----------------------------------------------|

## “A” and “B” Bathroom with Shower



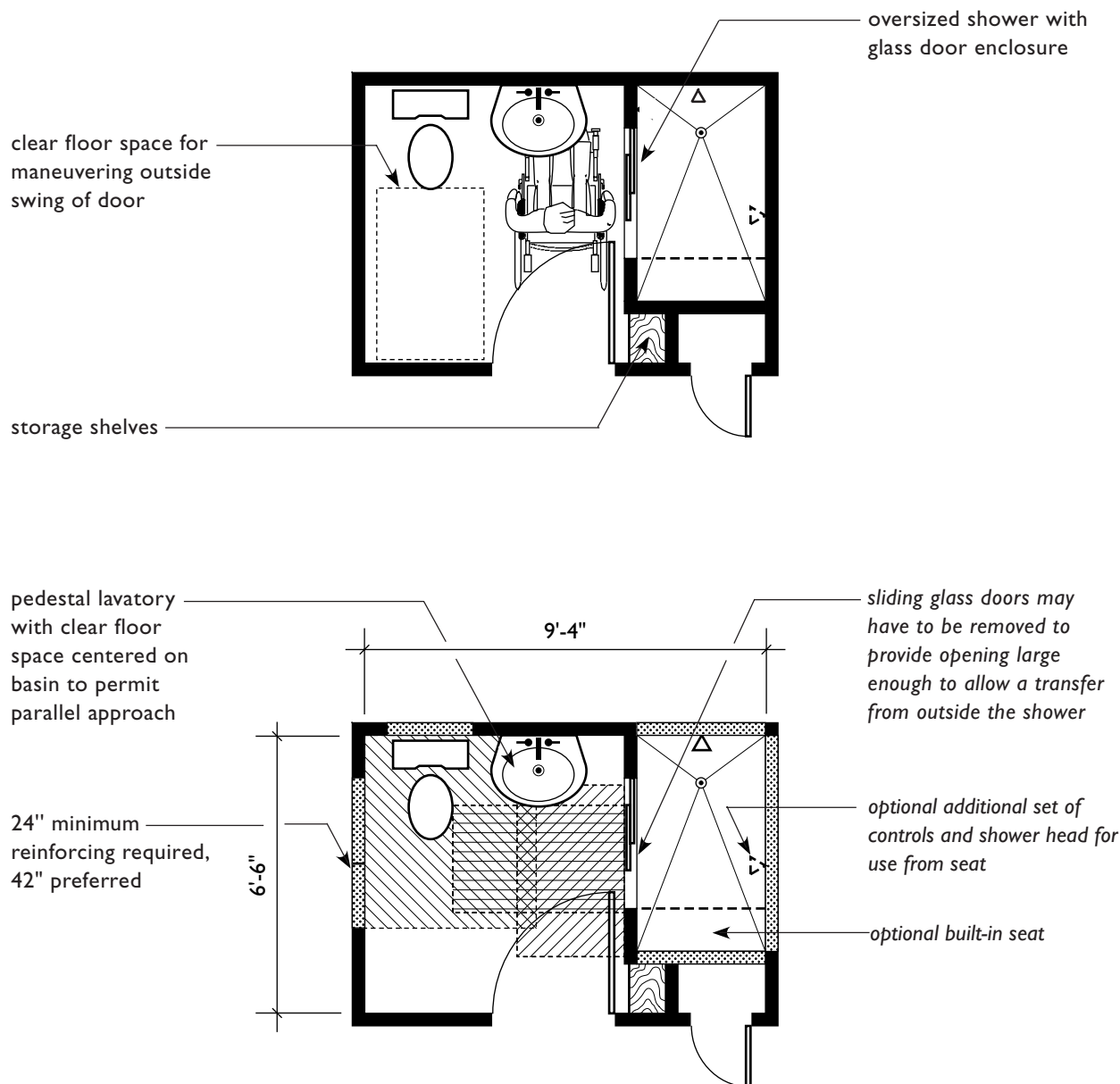
|                |                                              |                                        |                                              |
|----------------|----------------------------------------------|----------------------------------------|----------------------------------------------|
| <b>Legend:</b> | reinforcing in walls or floors for grab bars | min. clear floor space at each fixture | min. clear floor space outside swing of door |
|----------------|----------------------------------------------|----------------------------------------|----------------------------------------------|

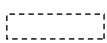
## “A” and “B” Bathroom with Shower



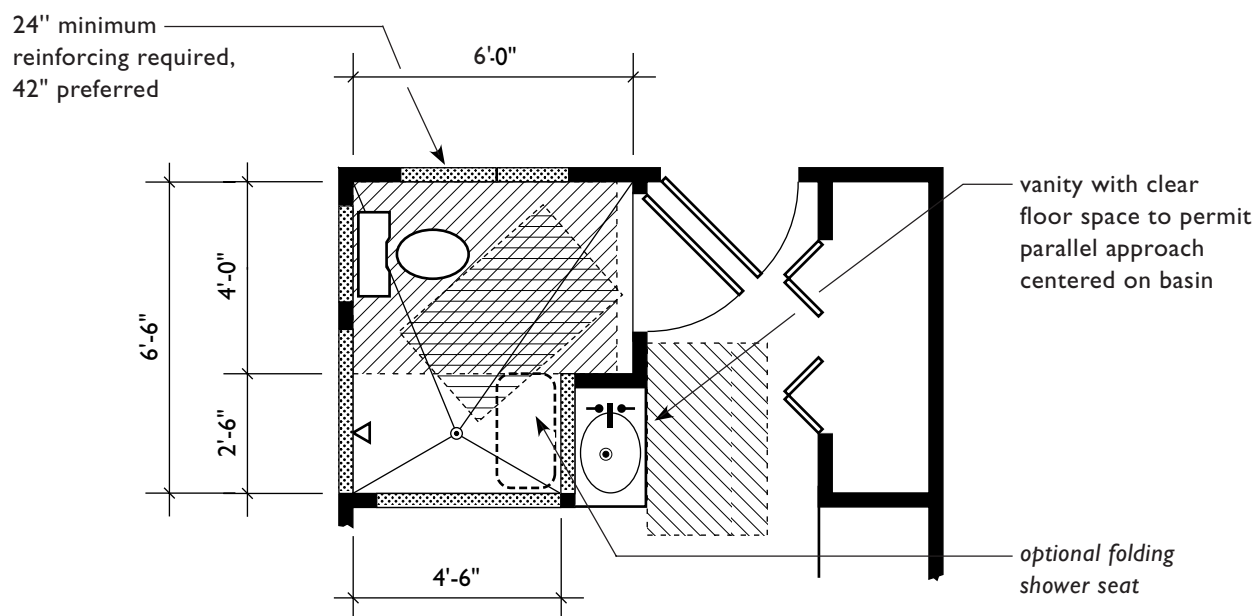
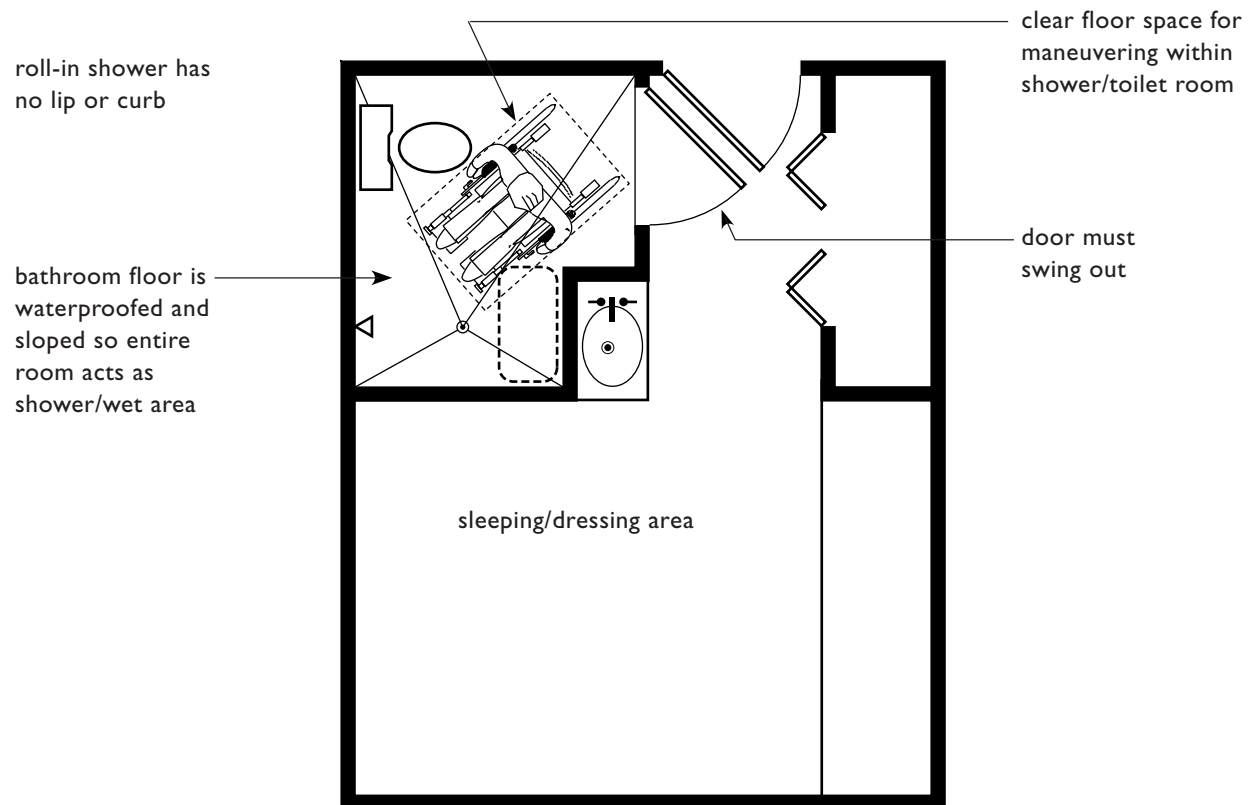
**Legend:**  reinforcing in walls or floors for grab bars  min. clear floor space at each fixture  min. clear floor space outside swing of door

## “A” Bathroom with Large Shower



|                |                                                                                                                                  |                                                                                                                            |                                                                                                                                    |
|----------------|----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| <b>Legend:</b> |  reinforcing in walls or floors for grab bars |  min. clear floor space at each fixture |  min. clear floor space outside swing of door |
|----------------|----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|

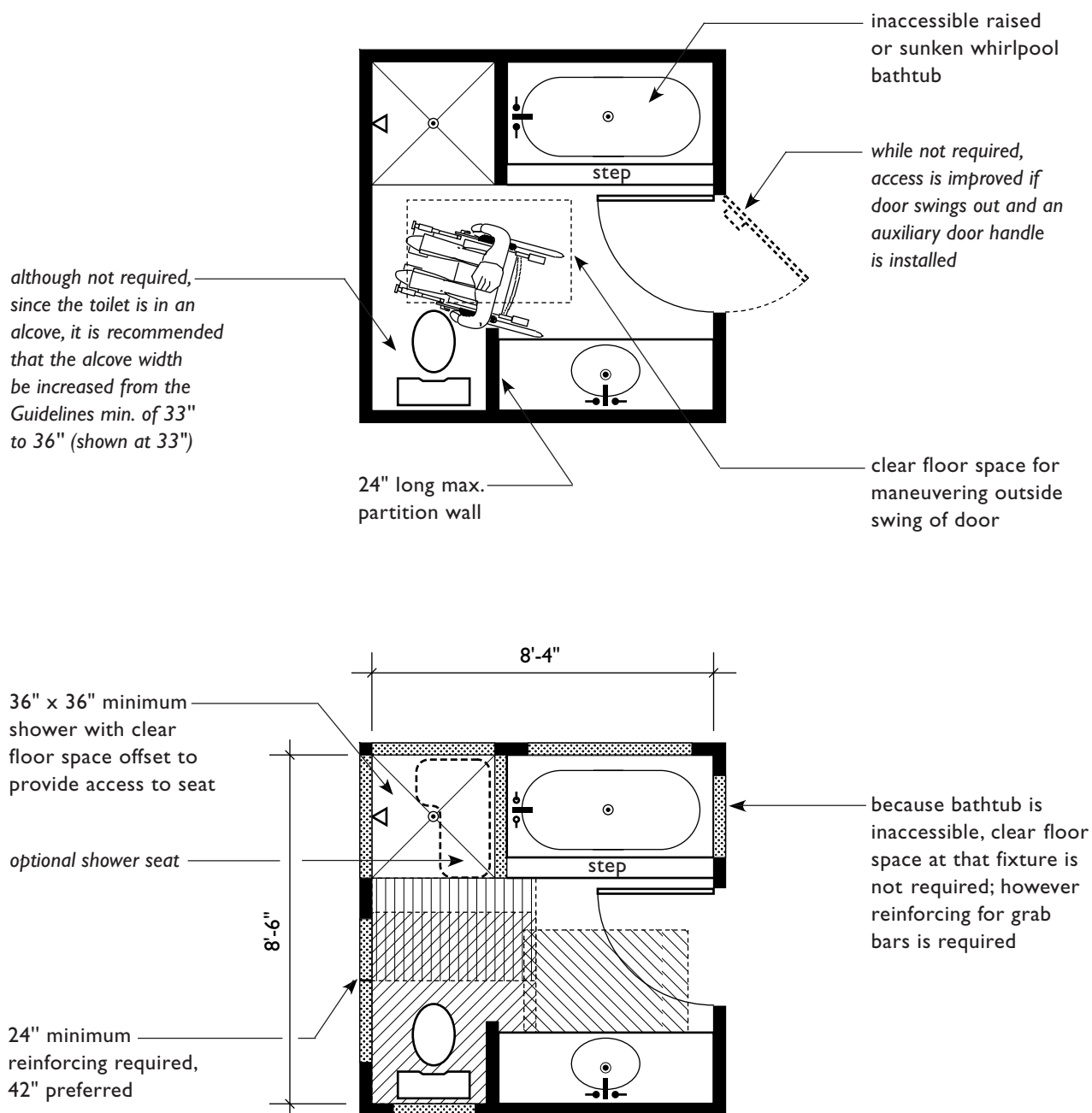
## Single Room Occupancy Unit with Roll-In Shower



|                |                                              |                                        |                                              |
|----------------|----------------------------------------------|----------------------------------------|----------------------------------------------|
| <b>Legend:</b> | reinforcing in walls or floors for grab bars | min. clear floor space at each fixture | min. clear floor space outside swing of door |
|----------------|----------------------------------------------|----------------------------------------|----------------------------------------------|

# BATHROOMS WITH TWO BATHING FIXTURES

## “B” Bathroom with Two Bathing Fixtures (Accessible Shower/Inaccessible Bathtub)



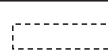
### Legend:



reinforcing in walls or floors for grab bars

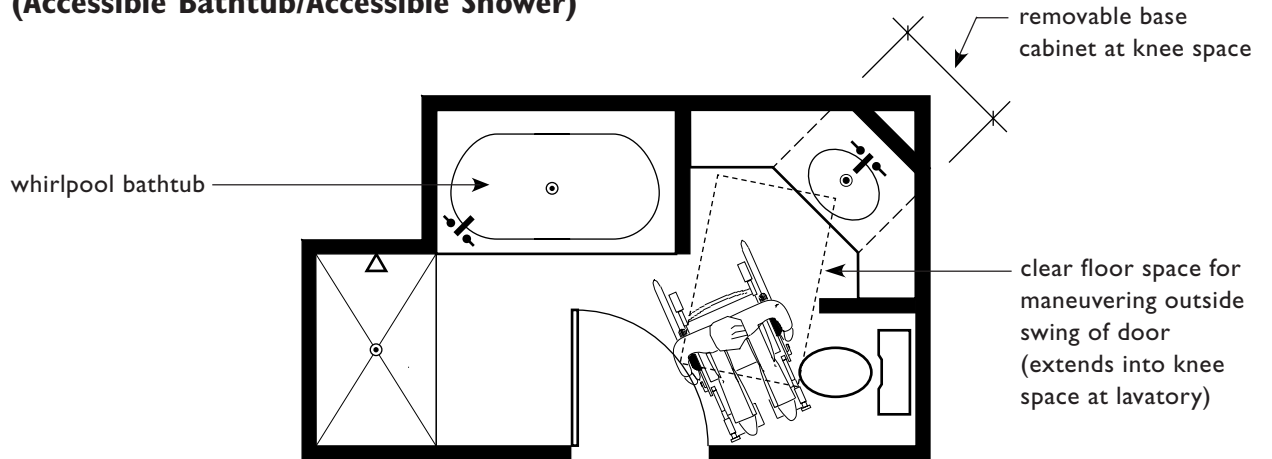


min. clear floor space at each fixture



min. clear floor space outside swing of door

## “A” and “B” Bathroom with Two Bathing Fixtures (Accessible Bathtub/Accessible Shower)



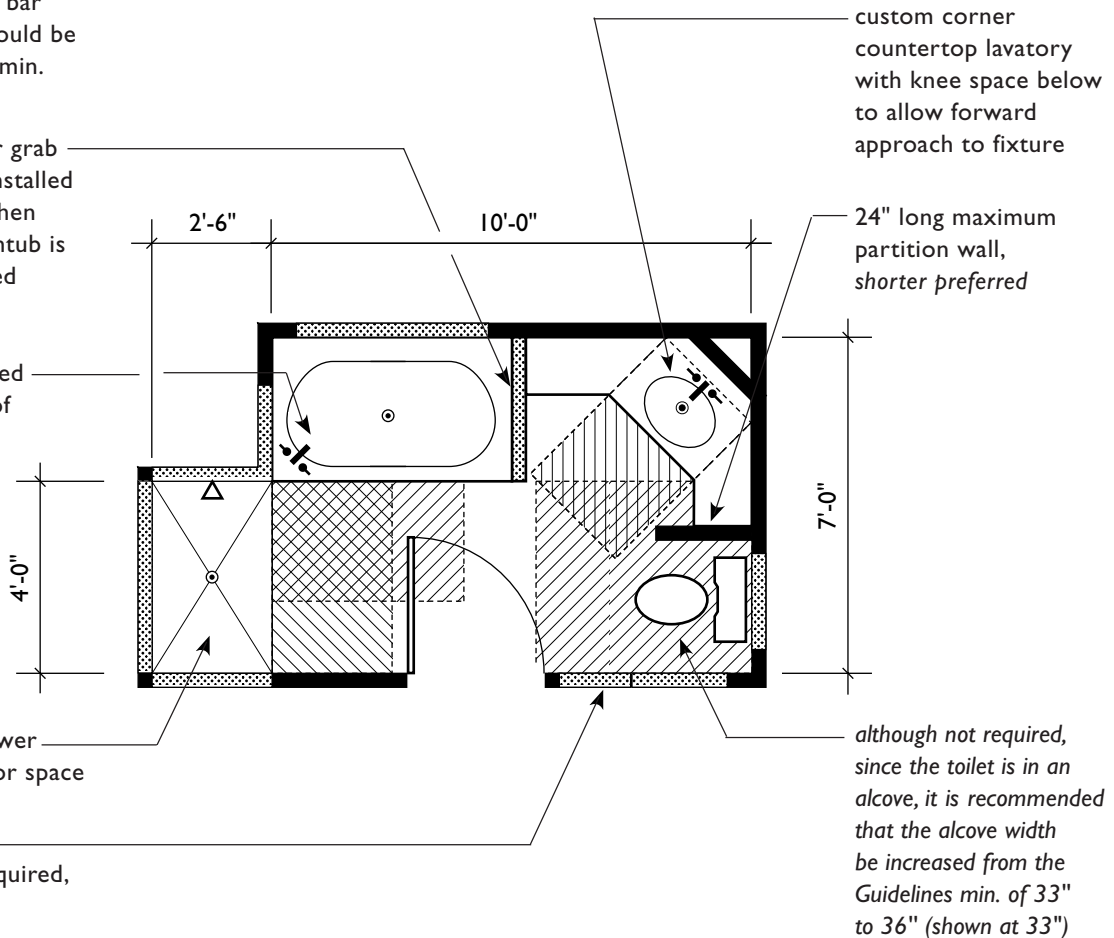
deck or floor-mounted grab bar reinforcing should be 6" to 8" wide min.

reinforcing for grab bars may be installed in the floor when whirlpool bathtub is not surrounded by walls

controls located within reach of seated user

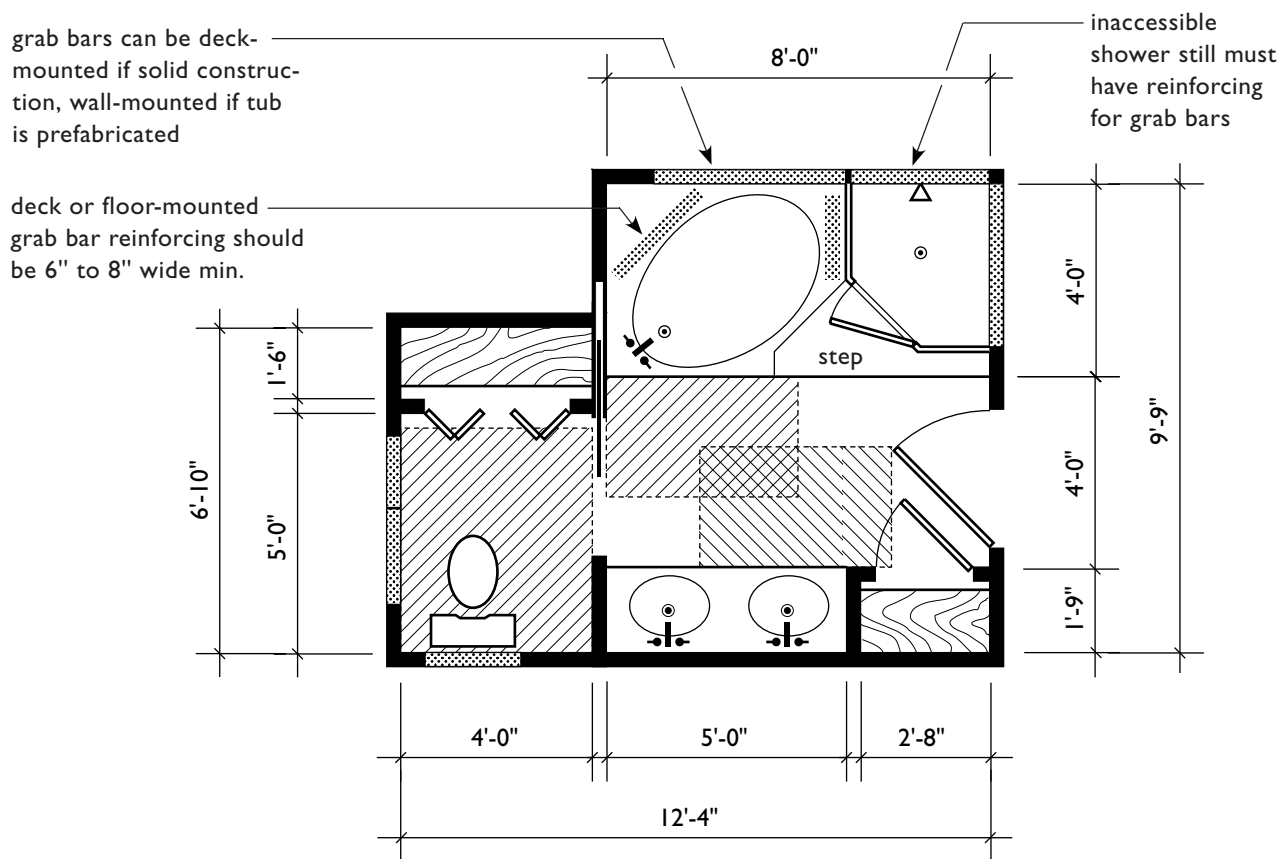
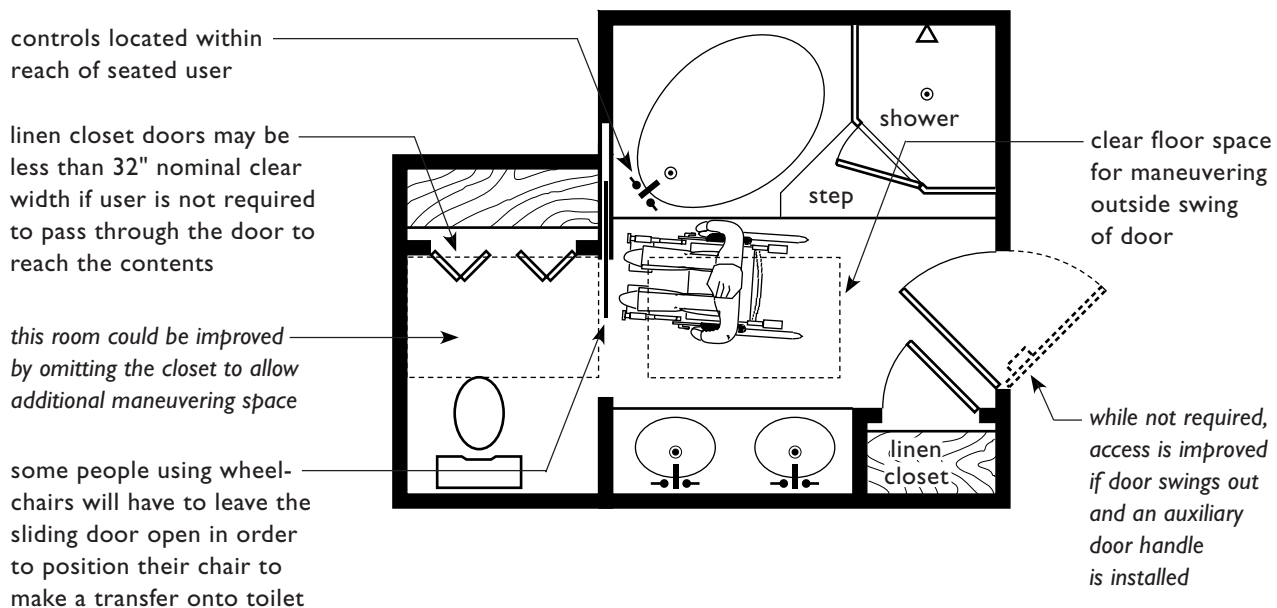
30" x 48" shower with clear floor space

24" minimum reinforcing required, 42" preferred



|                |                                              |                                        |                                              |
|----------------|----------------------------------------------|----------------------------------------|----------------------------------------------|
| <b>Legend:</b> | reinforcing in walls or floors for grab bars | min. clear floor space at each fixture | min. clear floor space outside swing of door |
|----------------|----------------------------------------------|----------------------------------------|----------------------------------------------|

## “B” Bathroom with Two Bathing Fixtures (Accessible Bathtub/Inaccessible Shower)

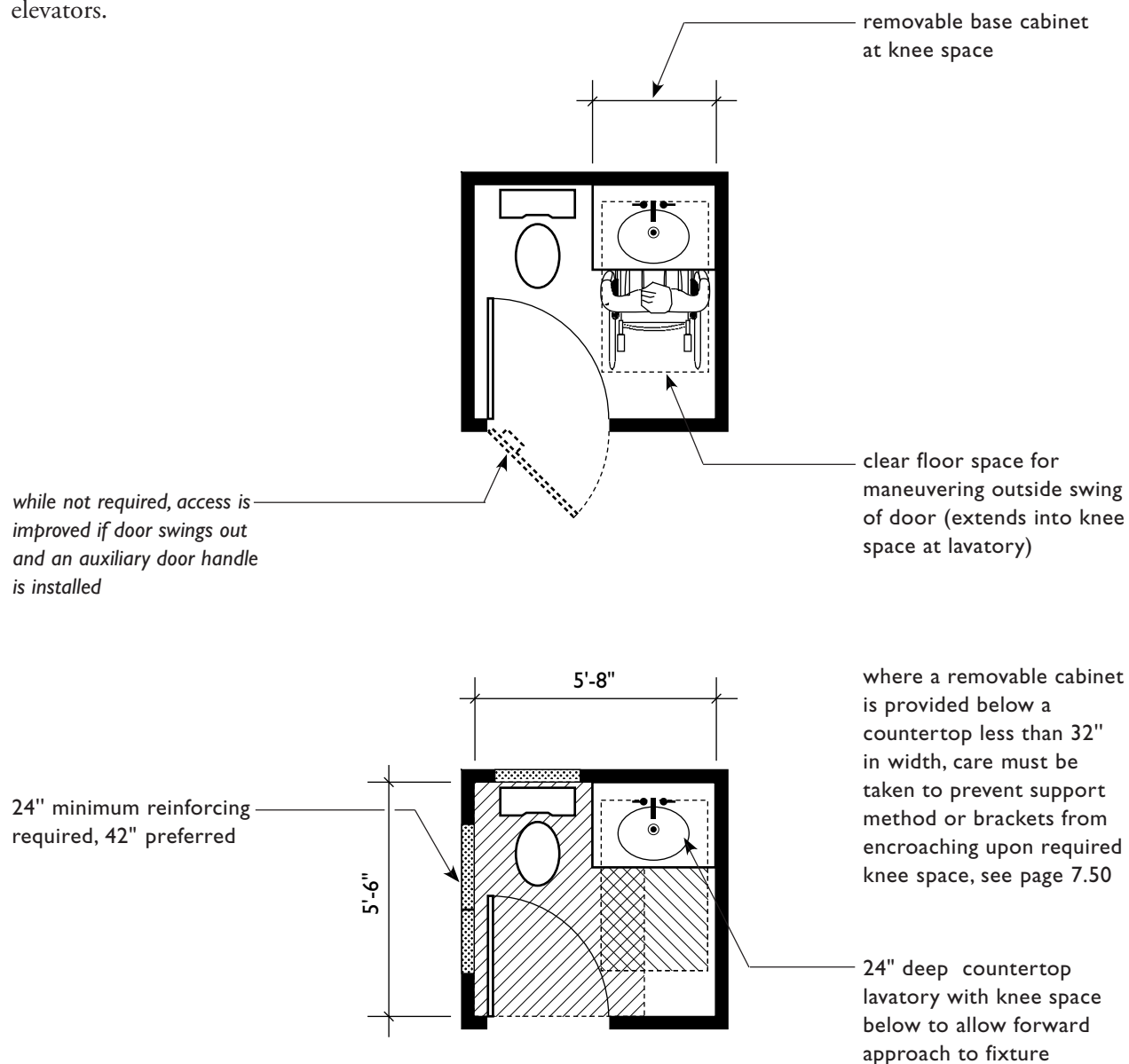


**Legend:**

- reinforcing in walls or floors for grab bars
- min. clear floor space at each fixture
- min. clear floor space outside swing of door

## POWDER ROOMS

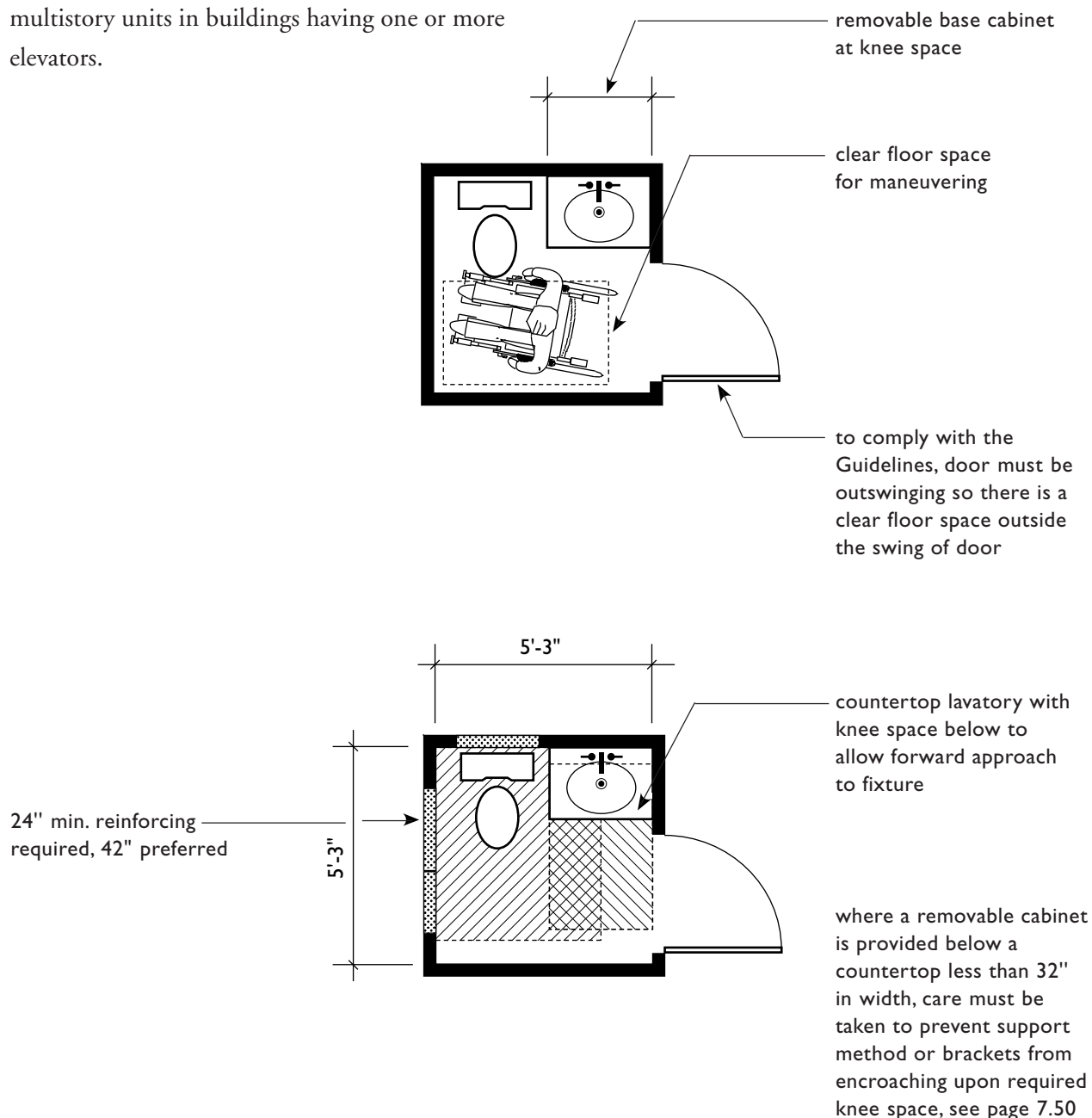
Powder rooms must meet the requirements for clear floor space at fixtures and reinforcing in walls only when they are on the accessible level of multistory units in buildings having one or more elevators.



**Legend:** reinforcing in walls or floors for grab bars min. clear floor space at each fixture min. clear floor space outside swing of door

## Powder Room

Powder rooms must meet the requirements for clear floor space at fixtures and reinforcing in walls only when they are on the accessible level of multistory units in buildings having one or more elevators.



### Legend:



reinforcing in walls or floors for grab bars



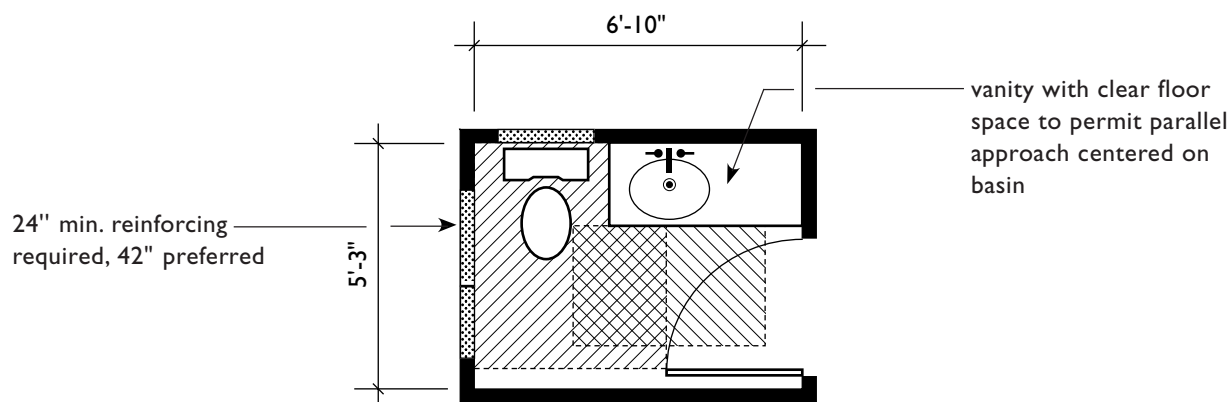
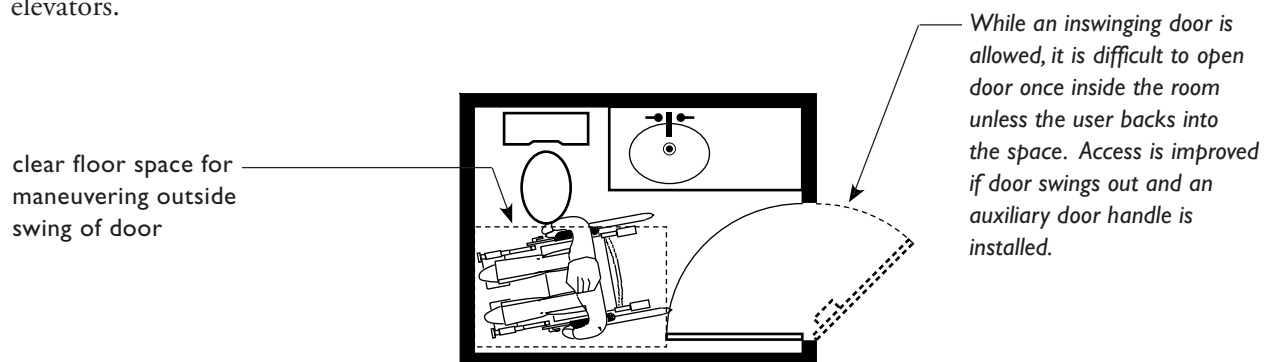
min. clear floor space at each fixture



min. clear floor space outside swing of door

## Powder Room

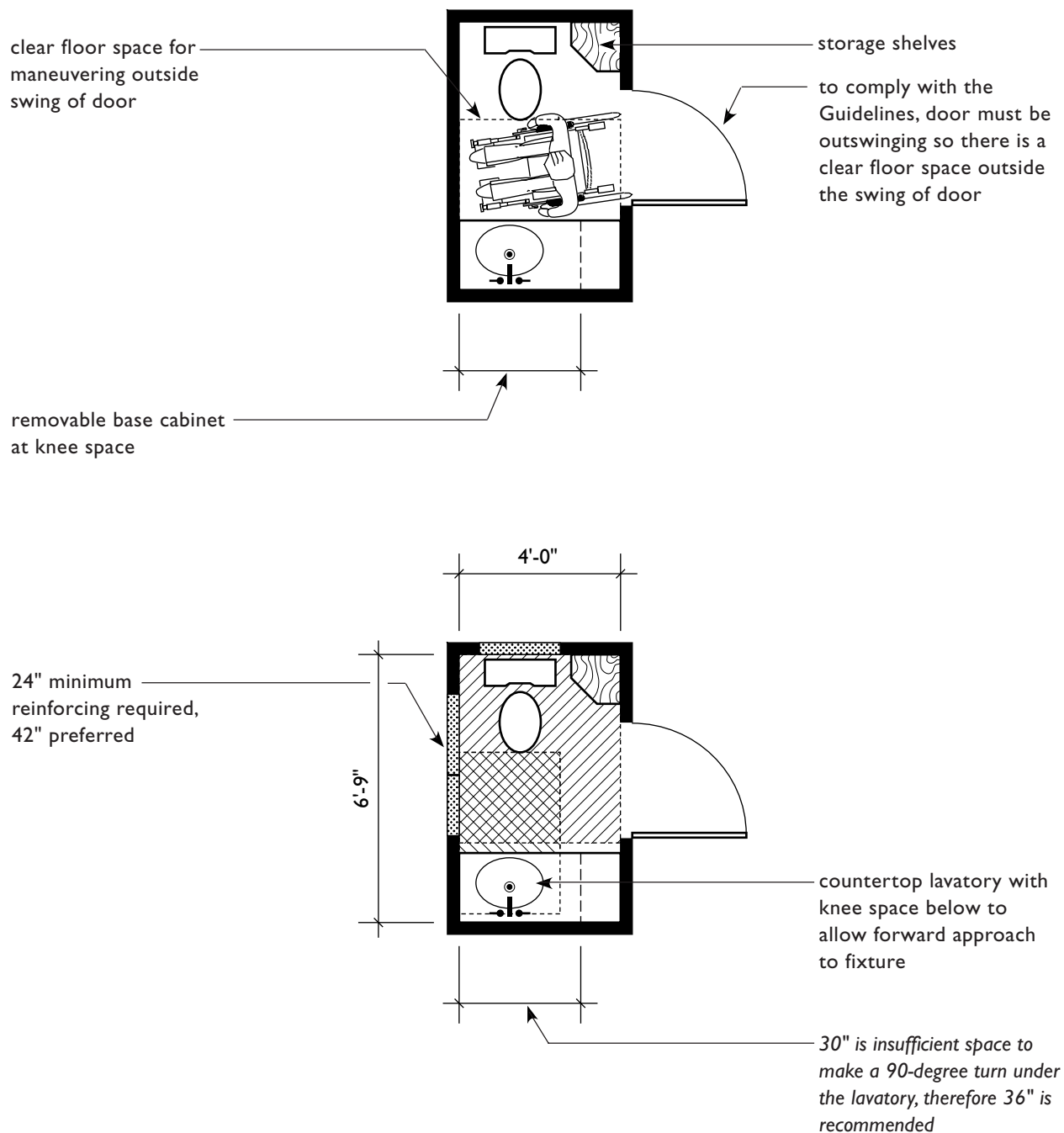
Powder rooms must meet the requirements for clear floor space at fixtures and reinforcing in walls only when they are on the accessible level of multistory units in buildings having one or more elevators.



|                |                                              |                                        |                                              |
|----------------|----------------------------------------------|----------------------------------------|----------------------------------------------|
| <b>Legend:</b> | reinforcing in walls or floors for grab bars | min. clear floor space at each fixture | min. clear floor space outside swing of door |
|----------------|----------------------------------------------|----------------------------------------|----------------------------------------------|

## Powder Room

Powder rooms must meet the requirements for clear floor space at fixtures and reinforcing in walls only when they are on the accessible level of multistory units in buildings having one or more elevators.



**Legend:** reinforcing in walls or floors for grab bars min. clear floor space at each fixture min. clear floor space outside swing of door